行政院及所屬各機關出國報告

(出國類別：九十一年度公務人員出國專題研究)

美國工程技術服務產業管理暨專業工程師教、考、用制度研習

服務機關:行政院公共工程委員會

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出國地區:美國

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摘要

美國專業工程師之制度發展很早且極上軌道，相關養成教育、考試制度、執業登記管理、執業環境等，均為世界各國所觀摩仿效之對象，非常值得參考，蒐集美國最新相關資料可作為我國整合及改善技師制度之借鏡。目前我國已是世界貿易組織WTO會員國之一，WTO極為重視專業服務自由化及國際化之發展，美國工程技術產業提供服務之方式非常多元且深具國際經驗，藉由瞭解美國工程產業相關法令及實務運作情形，可供我國有關工程產業相關法令制訂或修改之參考。

本專題研究在專業工程師方面，先就現行美國專業工程師之養成及管理制度詳細介紹，再探討美國專業工程師制度之未來發展趨勢，並介紹美國與專業工程師有關的專門技術人員養成及管理制度；在工程產業方面，則詳細說明美國工程技術服務業及營造業之管理制度，期能幫助國內工程界對美國制度有更多認識，並思考如何提昇我國技師及工程產業國際競爭力以符合世界潮流。

關鍵詞:美國專業工程師、工程技術服務業

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一、研究目的

政府為了保障人民生命財產、維護公共安全、提升工程技術及發展國民經濟，訂定了技師法，使技師成為具有法定地位之專業人員。同時，透過法律之授權，建立技師之執業證照及簽證制度，讓受過專業訓練之技師能實際參與並掌握各項工程，以確保工程成果能符合預期之目標。我國技師法自民國三十六年通過後，至民國九十一年歷經六次修正，惟相關之制度仍有許多待改進之空間，時常在工程界引起廣泛之討論。美國的專業工程師（Professional Engineer），相當於我國技師法所稱之技師，其管理制度發展於二十世紀初，歷經一世紀之發展，已十分成熟，不論是其教育養成、考試方式、及執業管理等制度，均為世界各國所觀摩學習之典範，非常值得我國加以參考。

工程技術服務業是由工程相關專門技術人員技師、建築師等提供專門技術服務之行業，在我國工程技術服務業可分為技師事務所、建築師事務所、技術顧問機構等三種型式，技師事務所、建築師事務所之型態已行之有年，惟技術顧問機構之組織型態及管理方式在國內卻紛紛擾擾多年，自工程會於八十九年三月十七日依技師法第六條授權訂定頒布「技術顧問機構管理辦法」後，技術顧問業者、技師公會團體都對條文規定有爭議及意見，而我國自九十一年已加入世界貿易組織WTO，對於我國技術顧問機構之管理是否符合工程技術服務之入會承諾，亦受到外商的質疑，美國是 WTO 內最有經濟實力之國家，其對於技術顧問機構管理方式，實有蒐集參考之必要。

另外，與專業工程師相關之專門技術人員，如建築師、土地測量師、景觀建築師等，美國亦有完善的管理制度，而與工程技術服務業同屬工程產業之營造業，亦有蒐集美國管理制度之需要。

為達成上述目標，本專題研究報告主要內容即是要瞭解美國專業工程師及相關專門技術人員之制度，與工程技術服務業與營造業之管理制度。

二、研究過程

為對於美國專業工程師之教、考、用制度，及工程技術服務產業管理能有進一步之瞭解，以作為我國技師制度及工程技術服務產業管理改進之參考，案經本會提報「工程技術服務產業管理暨專業工程師教、考、用制度研習」專題研究，承蒙本會各級長官之厚愛，並經甄試及格後，本人有幸得奉派赴美國進行研究。

為對於此一專題能有全面且深度的瞭解，有關研究過程擬分兩方面進行:在理論方面，擬赴美國對此有研究之知名大學研習有關課程並收集資料;在實務方面，擬參訪美國之專業工程師考試主辦單位、工程教育認證單位及專業工程師之證照管理單位。

在學校部分，經申請美國威斯康辛州立大學麥迪遜校區，蒙其同意以訪問學者身分進行六個月的專題研究，在該校研究期間並修習該校土木及環境工程系營建管理組所開設之營建工程計畫管理、工程法律觀點、營建工程運用方式分析等課程。因該校之指導教授對於專業工程師之管理制度及未來之發展趨勢知之甚詳，該教授並介紹相關學者專家相談，獲益良多。

在參訪部分，赴南卡羅萊納州克萊蒙森城之負責主辦全美專業工程師考試的國家工程及測量考試委員會(NCEES)，交換彼此看法，就教有關美國專業工程師考試方式、討論有關專業工程師執照法令之相關內容等問題。並赴馬里蘭州巴爾的摩市，拜會全美工程師教育認證之權威單位工程及技術教育認證委員會(ABET)，討論工程師教育認證及專業發展之相關問題，另外，經由馬里蘭州政府官員之安排，得以觀摩馬里蘭州政府有關專業工程師管理、執照核發及工程產業相關部門之實務運作方式，訪問之機構包括馬里蘭州政府勞工及執照管理部之專業工程師註冊委員會、交通部之大眾運輸管理局、環境部之證照及資源管理局等。

經由上述理論與實務結合，使此次專題研究收穫豐富，對美國專業工程師及工程技術服務產業制度有深入的瞭解。

三、美國專業工程師之養成及管理制度

3.1 專業工程師制度之源起及定義

美國所謂的專業工程師（Professional Engineer），相當於我國技師法所稱之技師，其管理制度發展於二十世紀初，當時美國進行大量的建設，但是對於各種工程設計圖說或工程計畫，卻是任何人都可以提供，許多非工程背景的人設計的成果，常常是很不精確、難以施工，甚至造成重大損失，一位懷俄明州的工程師 Clarence T. Johnson 眼見這種情形十分普遍且嚴重，於是便大力推動工程師必須具有專業認證註冊登記之立法，那時律師、醫師等其他專業人員之資格均已立法保護，惟許多公眾或團體對於工程師之資格須立法之必要性卻持懷疑與反對之態度，但在 Clarence T. Johnson 努力遊說立法者之下，使得懷俄明州於 1907 年成為美國第一個對專業工程師立法的州，隨後此一觀念日益普及，其他各州紛紛效法，以致全美各州均迅速陸續完成立法保障此一專業。

針對專業工程師之定義，一般在州法均作如下敘述：

「專業工程師指對公眾提供專業工程服務或創造性工程工作之人，該服務或工作需要此人在工程方面之教育、訓練及經驗，此人並能應用其在數學、物理及工程科學方面之專業知識於牽涉大眾福利、生命健康財產安全之公眾或私人設施、結構、建築、機械、設備、製程、工作或計畫有關之顧問、調查、評價、規劃、設計、或監造；其提供之專業服務內容，必須運用工程理論及數據以符合規範與確保計畫目的。」

雖然對專業工程師於州法通常有作如上定義，然而，在何者為「專業工程（professional engineering）」，何者為非「專業工程」，事實上目前在美國一般工程界仍認為要明確劃分頗為不易，因為「工程」之定義太廣，且各領域的發展及分支變化實在是太快，所以雖然很多人稱自己為工程師，惟據統計美國目前所謂「執業專業工程師」所從事之相關領域，百分之九十以上卻是與「土木建築工程」有關之工程。

3.2 專業工程師管理機關及相關機構

美國國土幅員廣大，為一聯邦制之國家，有五十州、一個特區（哥倫比亞特區，即首府華盛頓）、四個託管領地（關島、維京群島、北馬利亞群島及波多黎各），東西南北皆有不同之風土民情及地理環境，對於國內之公共安全福利事項，美國憲法規定此部份屬該國國內之「警察權（police power）」，警察權之運用不屬聯邦中央管理事項，係授權各州立法管理。由於專門職業及技術人員之執業牽涉公共安全福利，屬警察權，故美國對於管理專門職業及技術人員之執業並無全國性之統一機關，各州皆有其不同之需求，某些規定便可能產生不小差異。

大部分州將所有專門職業及技術人員，與有特別管理需求之行業，統一納入州政府內之證照管理部（Department of Licensing and Regulation）管理，證照管理部在各州名稱通常略有不同，如馬里蘭州稱勞工及執照管理部（Department of Labor, Licensing and Regulation）、伊利諾州稱為專業人員管理部（Department of Professional Regulation）、加州稱為消費者事務部（Department of Consumer Affairs），但其基本上對於專門職業及技術人員採取之管理模式及理念均類似，州法內對各專門職業及技術人員管理均列有專章，而證照管理部下則針對各專門職業分別設註冊委員會（Registration Board），如醫師、律師、會計師、建築師、專業工程師等均設有各自之註冊委員會，註冊委員會之委員大部分為該專門職業界極有聲譽或地位之註冊執業人員而很少為政府官員，通常係由州內該專門職業公會或相關學會提名，再由州長任命產生。美國對於專門職業人員之管理理念主要是同儕審查（peer review），由執業之專業人員主導註冊委員會，委員會藉者舉辦考試、評估專業經驗及執行法規等權力來管理專業人員，因註冊委員會之職掌及組成均規定於州法中，具有法定地位，基本上是屬於政府機關之一部分，而非民間機構，但依其委員之組成來看，似乎卻又具有「半官方」機構之性質。本報告係研究專業工程師之管理，以下就專業工程師之註冊委員會之任務及功能作一詳細說明。

各州有關專業工程師之註冊及管理，通常與專業土地測量師

（professional land surveyor）合併成立專業工程師及土地測量師註冊委員會（例如加州），亦有許多州係成立單一專業工程師註冊委員會（例如佛羅里達州），有的州則與建築師、景觀建築師等合併成立註冊委會（例如威斯康辛州）。委員通常須為美國公民及該州居民，人數各州規定不一，但一定要包含有執照之專門技術人員（視委員會包含之專業種類而定，如專業工程師、土地測量師、建築師或景觀建築師等），且該專門技術人員須具備相當經驗。例如加州規定專業工程師及土地測量師註冊委員會總數為十三人，其中五位為執業專業工程師，一位為執業土地測量師，七位為非屬執業專業工程師或執業測量師之一般公眾代表（public member），除該七位公眾代表外，其餘六位委員須有十二年專業經驗以上，又如伊利諾州之專業工程師委員會之委員有十人，其中九位為執業專業工程師，一位為公眾代表，專業工程師須有十二年以上專業經驗，且須主管負責工程事務五年以上。委員會中之專業工程師還會按照執業專業工程師之科別比例訂人數，具土木方面專長之專業工程師人數一般較多，通常會有兩人以上，委員中通常也有具電機、機械、化工方面專長之專業工程師。值得注意的是各州註冊委員會除專業工程師或其他專業人員外，一定會有公眾代表，因為專業工程師之執業涉及公共福利安全，大眾的意見與專業工程師本身執業之利益有時會有不同，設公眾代表之目的即為能納入一般非專業人員之看法。另外因為委員會除技術方面之專業審查外，常常須作有關法令解釋，故委員會都會聘有法律顧問或由州政府指派法律顧問以為輔佐。

註冊委員會之權責大致如下：

（1）專業工程師考試資格之審核、舉辦考試、核發執照。

（2）管理專業工程師之執業、糾紛之仲裁及懲戒。

（3）負責法規之修訂。

（4）其他相關業務，如作為州長之工程顧問，與其他專門職業之協調等。

通常委員會下還會由各委員設小組分工處理以上事項，委員（除公眾代表外）之任務主要在於對政策法規解釋及實質審核欲參加專業工程師考試者之報名資格，如經驗、學歷等。另委員會之日常業務部分設有執行主

任（executive director）及相關職員，該等人員由州政府證照管理部的職員擔任之，職員僅負責行政業務，如聯繫開會、協調考試業務、製作執照等，並不涉及委員之專業權責，簡而言之，委員具有審核權與決策權，職員則聽命於委員會辦理日常業務。委員會之支出（包括職員之薪水）並不由州政府編列預算支應，而係由舉辦考試時之考生報名費、申請執照者之申請費、更新執照者所繳之費用等收入來支應相關支出。

關於專業工程師之考試及教育資格認證方面，有兩個十分重要的民間機構參與，一為美國國家工程及測量考試委員會(National Council of Examiners for Engineering and Surveying, 簡稱 NCEES)，另一為工程及技術教育認證委員會(Accreditation Board for Engineering and Technology, 簡稱 ABET)，分別簡述如下：

NCEES：雖然專業工程師之考試是由各州註冊委員會所舉辦，但各州除有因應該州特別需求之考試外，一般專業工程師考試之題目內容均係由 NCEES 提供給各州註冊委員會，NCEES 成立於 1920 年，曾經更名過數次，是一不屬於任何政府機關之民間機構，但其會員卻係由各州註冊委員會所推派之代表（通常是各州委員會之主席）組成，全美國 NCEES 會員分為東、西、南、中四大區，各區約包含十多州，每區均設副總裁一人，副總裁由每區內各州註冊委員會之代表競選產生，總裁由各區輪流，由所輪到之區內各州註冊委員會之代表競選產生，簡而言之，NCEES 可說是一個以協調各州註冊委員會為宗旨之民間單位。

NCEES 主要之功能為：

（1）提供統一考試題目供各州註冊委員會辦理考試用，及出版輔助教材協助考生準備考試。

（2）提供各州註冊委員會一個適當的交流論壇，並擬定模範法(Model Law)，供各州修改專業工程師相關法律時參考採納。

（3）提供跨州執業資訊登錄服務，以利各州註冊委員會審查別州專業工程師之資料。

ABET：在美國不管是任何專業領域，通常都有教育認證單位對大學教

育學程進行認證，以確保高等教育之品質，教育認證不屬強制性，且認證單位均為非政府機關之民間機構，認證單位只對自願接受認證之大專教育學程進行評估認證，但認證結果對一般大眾及學子均極具參考性與公信力，各專業之註冊委員會亦都充分相信認證學程之教育品質。在工程方面之教育認證單位即是 ABET，ABET 成立於 1932 年，最早名稱為工程師專業發展評議會（Engineer's Council for Professional Development, ECPD），1980 年更名為現今之名稱 ABET，ABET 為美國教育部及高等教育認證委員會（Council for Higher Education Accreditation）所認可對工程教育認證之機構，參與成員共有三十一個各工程領域之專業社團及相關團體（其中亦有 NCEES 之代表），認證領域除工程（Engineering）外，尚包括技術（Technology）、電腦（Computing）及應用科學（Applied Science），因此 ABET 下有四個次委員會 EAC(Engineering Accreditation Commission)、TAC（Technology Accreditation Commission）、CAC（Computing Accreditation Commission）、ASAC（Applied Science Accreditation Commission）承辦各領域之認證。

ABET 在工程教育之主要功能為：

（1）對全美國自願接受認證之大專工程教育學程進行評估認證。

（2）各州註冊委員會審查考生之教育資格時均接受 ABET 之認證課程。

（3）推廣國際間工程教育之交流及相互承認。

3.3 專業工程師之管理法令

各州的州法（State Statute）均對專業工程師之管理列有專章，為方便引用，許多州將該專章獨立稱作「專業工程師法(Professional Engineers Act)」或「專業工程執業法（Professional Engineering Practice Act)」，該法規定專業工程師之定義、資格、考試、業務範圍、登錄、執業、懲戒、註冊委員會之權責等，對於提供工程技術服務公司設立條件之要求亦多有相關規定。有關 NCEES 所擬訂之模範法(Model Law)，事實上對各州註冊委員會執行該州專業工程師法並不具約束力，模範法僅係各州註冊委員會代

表於參加 NCEES 年度大會時所訂之參考法，每年模範法會根據該年度大會時各 NCEES 會員討論意見酌作修訂，以供各州委員會於將來該州專業工程師修法時之參考。目前各州已採用 NCEES 所提供之考試題目，在考試上可說各州已採用統一標準，但各州的法令卻有很多地方不同，常常造成美國專業工程師跨州執業時之困擾，雖然各州地理人文環境不同，但法令仍有許多可朝向均一規定的地方，且有的州存在十分不合理之規定有待改進，因模範法係由各州委員會所討論產生，代表大美國多數專業工程師註冊委員會之意見，且一年一修，常納入許多符合未來潮流的新方向，所以制訂模範法之理念即在提供供各州專業工程師法漸朝統一思考模式，並給存在不合理規定的州造成壓力，以促成其去除相關不合理規定。

3.4 專業工程師資格之取得方式

雖然各州對專業工程師之管理法規內容均不大相同，但不管在任何州欲取得專業工程師之資格以登錄領得執照，一定會遵守所謂的 3E 基本條件，即教育（Education），考試（Examination），經驗（Experience），其方式係以通過二階段考試過程達成，第一階段考試稱為基本工程知識考試(Fundamentals of Engineering Examination, FE Exam)，在參加 FE 考試之前，需經註冊委員會審查具有適當的教育學歷始得考試，通過 FE 考試者，稱為實習工程師(簡稱 EIT 或 EI)(Engineers in Training, or Engineer Interns)，第二階段考試稱為工程理論與實踐考試(Principles and Practice of Engineering Examination, PE Exam)，在參加 PE 考試前，需經註冊委員會審查具有適當的工作經驗，及繳交數份由了解申請考試者工作經驗之工程師所寫的推薦信（大部分州規定需五封推薦信，其中至少有三封推薦信應為具有專業工程師資格者所出具），始得考試，通過 PE 考試後，繳交申請執照費用，即可取得專業工程師之執照開始執業。FE 考試及 PE 考試每年皆舉辦兩次，分別在四月及十月，有關 FE 考試內容與其所需之學歷條件，及 PE 考試內容與其所需之經驗條件，詳細介紹如下：

（一）基本工程知識考試(Fundamentals of Engineering Examination,

FE Exam)：

由於 ABET 對其所認證之教育學程嚴格把關，具有相當公信力，一般由 ABET 之 EAC (Engineering Accreditation Commission of ABET, EAC/ABET) 認證 4 年制大學工程學程所畢業之學士，各州註冊委員會均直接接受其學歷，許多州更允許 EAC/ABET 認證學程之學生於其大三或大四時就可以參加 FE 考試，另外由 ABET 之 TAC 所認證之 4 年制技職大學工程技術職業學程之學士，其畢業後通常亦得直接參加 FE 考試，而非由 EAC/ABET 或 TAC/ABET 認證之學程畢業之學生要參加 FE 考試前則需加上額外的工作經驗。少數州甚至允許高中畢業者參加 FE 考試，不過要求其參加考試前之工作經驗通常極長，且此種情形較少發生。

FE 考試之時間為八小時，上下午各四小時，上午四小時考大學前二年之共同科目（如數學、物理、化學、共通性工程知識等），只有一套題目，含一百二十題選擇題，一題一分；下午四小時則考大學後二年之專業科目，按照考生主修之學科有七套題目（土木、電機、機械、化工、工業工程、環境工程、或不屬前六類之一般工程）可供選擇，下午之考試需作答六十題選擇題，一題二分，答錯皆不倒扣。FE 考試在數年前原是採 open-book 之方式，最近已改成考試時只能使用監考官發下之由 NCEES 所提供之參考手冊，不過該參考手冊列有許多基本公式，已足供考生查考之用。

考生之成績係由 NCEES 計算，有原始分數及轉換分數二種呈現方式，原始分數之總分為二百四十分，轉換分數則以一百分為滿分（由當次考試原始分數最高分者轉成，該原始分數不一定為二百四十分），最低原始及格分數由 NCEES 召集專家（大部分為執業之專業技師）所組成之委員會評估，將原始及格分數轉成轉換分數七十分作為及格分數，考生之轉換分數達七十分以上便為及格。NCEES 於計算完考生之成績後便會將成績結果通知各州註冊委員會，再由各註冊委員會通知考生是否通過 FE 考試。FE 考試之通過率（pass rate）各學科有所不同，各年也有高低變化，平均約在百分之八十左右。

部分州有可免參加 FE 考試而直接參加 PE 考試之情形，例如奧瑞岡州有規定 EAC/ABET 畢業生其具有二十年以上之工作經驗者，可免參加 FE 考

試，又如華盛頓州、威斯康辛州等，EAC/ABET 畢業生只要具有十二年工作經驗，就可免參加 FE 考試。此類情形通常是畢業時錯過參加 FE 考試機會，多年後才想報名專業工程師考試者，因 FE 考試內容多與學理有關，且包含多種科別，對於畢業後從事本科工程領域多年之工程師來說並不容易，許多州之州法中便給予這些具有豐富實務經驗者優待，讓其得以直接參加考試內容主要為工程實務且選擇專注於本科之 PE 考試。

（二）工程理論與實踐考試(Principles and Practice of Engineering Examination, PE Exam)：

欲報名參加 PE 考試，有兩個必要條件，第一個條件是已通過 FE 考試，第二個條件是提出具有適當的工作經驗之證明並經註冊委員會審查通過。FE 考試之內容如前述，有關工作經驗要求之長短，通常以學歷區分，由 EAC/ABET 認證學程畢業之學生需提出至少四年之工作經驗證明（全美只有加州例外，由 EAC/ABET 認證學程畢業之學生於加州申請考 PE 考試只需提出二年之工作經驗證明），其他非由 EAC/ABET 認證學程畢業之學生則需提出大於四年之工作經驗證明，例如 TAC/ABET 認證學程畢業之學生一般需提出六年之工作經驗證明，非由 EAC/ABET 或 TAC/ABET 認證之學程畢業之學生一般需提出八年之工作經驗證明，某些允許高中畢業學生參加 FE 考試並通過者則需提出十二年之工作經驗證明。其實除加州外，工作經驗也有可少於四年之情形，這方面大部分州對由 EAC/ABET 認證學程畢業之學生一般都有優待，如其取得碩士學位可抵一年經驗，即只需三年工作經驗，某些州如伊利諾州允許如由 EAC/ABET 認證學程畢業之學生其取得博士學位可抵二年經驗，即只需二年工作經驗。

工作經驗內容，基本上有數項要求：

（1）必須與申請人參加 PE 考試特定學科（如土木、電機...等）相關之工作經驗。

（2）必須是在有執照的專業工程師監督下完成的工作經驗。若該工作不是在有執照的專業工程師監督下完成，則申請人必須提供足以說服註冊委員會之工程工作證明文件（如設計圖說或計畫書）。

（3）應能顯示確有應用工程理論作判斷，及發展申請人之專業技術。

（4）應能顯示內容由淺入深、由簡入繁，責任由輕至重。

工作經驗範疇包含建築、結構、機械、設備、製程、系統、計畫等之顧問、設計、評價、監造、調查、規劃等，一般在工程設計公司(engineering design firm) 從事之工作經驗最易被註冊委員會所接受，除工程設計公司外之工作經驗，評定原則大致如下：

（1）於軍中取得之經驗若要獲得承認，申請人必須證明該經驗之性質相當於民間之工程技術服務工作。

（2）從事銷售或估價方面之經驗若要獲得承認，需證明該工作必需運用工程原理（engineering principles)。

（3）在大學做研究助理之經驗需證明為全時工作，不是唸學位時所做兼職工作。

（4）從事重複性（routine）工作之技術人員（technician）其經驗不予計入。

(5)以承包商(contractor)身分按設計圖施工，或是以領班(foreman)或監工（superintendent）之身分督導施工，這種經驗通常不予計入工作經驗年資中，但如果此類經驗經註冊委員會認定其性質具有相當程度擴展申請人之工程知識與技能，則委員會得認可其經驗，並給與該申請者由委員會認為適當之年資。

如何填寫工作經驗以使註冊委員會認可符合要求，對申請參加PE考試者是一項考驗，因為填的不夠詳盡，不夠精確，或累計時間算錯都會被註冊委員會打回票，稍一不慎便有可能失去參加該次考試之機會，而需再等半年參加下次考試。申請相關表格中附有委員會提供之填寫工作經驗的表格，此表格涵蓋兩部分，一部分由申請者填寫，另一部分由申請者之證明人（endorser)（通常是申請者之上司（supervisor)) 填寫，申請者填寫之部分必須非常詳盡，按照時間之順序描寫工作之性質及內容，填寫完後交給證明人檢視是否真實正確並簽名背書，再由證明人直接將工作經驗表郵寄註冊委員會，申請人並不會看到證明人對其之評語。

PE考試分有十七個專業分科，分別為農業工程(Agricultural)、建築

設備工程（Building Architectural）、化學工程（Chemical）、土木工程（Civil）、控制系統工程（Control Systems）、電機工程（Electrical）、環境工程（Environmental）、防火工程（Fire Protection）、工業工程（Industrial）、製造工程（Manufacturing）、機械工程（Mechanical）、冶金工程（Metallurgical）、採礦及冶礦工程（Mining/Mineral）、造船及航海工程（Naval Architecture/Marine Engineering）、核子工程（Nuclear）、石油工程（Petroleum）、結構工程一（Structural I）、結構工程二（Structural II），考試採 open-book 方式，時間為八小時，上下午各四小時，除結構工程二該科有申論計算題外，其他科別題目皆為選擇題。土木工程、電機工程、機械工程等考生人數最多的三大類科，採取所謂「廣度與深度（Breadth/Depth）」考試題目，上午四小時考該類科考生所應具備之普遍性理論與實務知識，下午四小時就該類科中分為數個專業題組，由考生就該類科中其最專精的專業部份選擇一個題組作答，例如土木工程科上午之題目係就該科五類專業部分一環境工程、大地工程、結構工程、交通工程、水資源工程平均各配分百分之二十，考生均要作答每一部分，但下午的題目便分別就環境工程、大地工程、結構工程、交通工程、水資源工程各有一題組，如某一考生其專精部分在於水資源工程，其下午可僅選擇水資源工程題組作答。

除土木工程、電機工程、機械工程等三大類科外，其他類科並未採「廣度與深度（Breadth/Depth）」考試題目之方式，即上午與下午考的專業科目相同，上午的題目偏重理論知識，下午的題目較偏重實務經驗，且無題組可供選擇。

以下為各類科題型之整理比較表：

考試類科	題型	題目數
農業工程	選擇題	上下午各 40 題
建築設備工程	選擇題	上下午各 40 題
化學工程	選擇題	上下午各 40 題
土木工程	選擇題（廣度與深度）	上午 40 題 下午有五個題組，每個題組各 40 題，考生挑一題組作答

控制系統工程	選擇題	上下午各40題
電機工程	選擇題（廣度與深度）	上午40題 下午有三個題組，每個題組各40題，考生挑一題組作答
環境工程	選擇題	上下午各50題
防火工程	選擇題	上下午各40題
工業工程	選擇題	上下午各40題
製造工程	選擇題	上下午各40題
機械工程	選擇題（廣度與深度）	上午40題 下午有三個題組，每個題組各40題，考生挑一題組作答
冶金工程	選擇題	上下午各40題
採礦及冶礦工程	選擇題	上下午各40題
造船及航海工程	選擇題	上下午各40題
核子工程	選擇題	上下午各40題
石油工程	選擇題	上下午各40題
結構工程一	選擇題	上下午各40題
結構工程二	申論及計算題	上午有二個題組，考生挑一題組作答，下午亦有二個題組，考生挑一題組作答

PE 考試考生之成績轉換之方式與 FE 考試類似，最低原始及格分數由 NCEES 召集專家（大部分為相關類科執業之專業技師）所組成之委員會評估，再將原始及格分數轉成轉換分數七十分作為及格分數，考生之轉換分數達七十分以上便為及格，NCEES 於計算完考生之成績後便會將成績結果通知各州註冊委員會，再由各註冊委員會通知考生是否通過 PE 考試。PE 考試因在考生畢業多年（通常四年）後才參加，不若剛畢業的學生較會考試（因其在學期間習於考試），且題目兼具理論與實務，其通過率（pass rate）較 FE 為低，土木工程科約百分之六十，電機工程科、機械工程科約百分之六十五。

至於是否有可免參加 PE 考試之情形，大約有以下三種情況：

（1）申請者已在其他州領有專業工程師執照，欲跨州到本州註冊執業時，若另外一州對於該州專業工程師之教育、考試、經驗要求與本州相同或類似時，通常可透過「對等互惠（reciprocity）」之方式，承認另外一

州之執照免再考試。因為各州委員會舉辦考試所用之題目均為NCEES提供，如一位經EAC/ABET認證學程畢業之學生，其工作經驗之年數在四年以上，且已通過FE及PE考試，其便很容易達到此一跨州執業免考試之情形，不過有的州會因應其地理環境(如抗寒、抗風、抗震等)自行增加辦理除NCEES提供題目之外的考試，在當州則必須再加考該額外考試才能取得執照。

(2)「祖父條款(grandfather clause)」：工程之領域之發展分工愈來愈細及專業化，當一個新的領域需要有專業工程師時，在剛立法通過時通常會有一條款稱「祖父條款」，該條款規定在此新領域剛開始核發執照之一段期間（通常不會太長）內，該領域有豐富經驗之工程師可不用參加PE考試，申請執照憑提供其該領域足夠之專業工作經驗，經註冊委員會審查便可領得執照。經由此一方式取得執照之專業工程師，除非另外一州也有新增類似領域，否則甚難跨州執業。

(3)工程領域之「卓越(eminent)」人士：少數州有規定在某一工程領域有極為卓越貢獻（如創造、發明新知識理論）者，其工作經驗在十五至二十年（或更久）以上，經註冊委員會審核通過，可免參加PE考試，但必須一提的是，此種情形極少發生，且通常註冊委員會亦會對該卓越人士施以口試。經由此一方式取得執照者，亦甚難跨州執業。

3.5 專業工程師之執業規定

3.5.1 稱謂之保護

在美國「專業工程師(Professional Engineer, P.E.)」此稱謂(title)是被法律所保護的，沒有依法取得專業工程師執照者，不管其利用何種方式，如口頭表示、載於名片或任何廣告型式（包括登載於電話簿），讓任何人認為其是專業工程師者，一但被檢舉或被州註冊委員會發現，皆會被處以罰鍰，而未取得資格者擅以專業工程師名義實際執行業務時則會被處以刑責。美國專業工程師通常還有另外二種意義相等之稱呼，分別為「註冊工程師（Registered Engineer, R.E.)」及「顧問工程師（Consulting Engineer, C.E.)」，有些州對於此二稱謂亦有立法保護。我國技師法對於

「技師」此一稱謂並無保護，不過對於未取得技師資格擅自執行技師業務者則有規定處以徒刑或罰金，將來是否要將「技師」此一稱謂立法保護以提升技師社會地位，似乎值得思考。

3.5.2 執業分科

大部分州核發之專業工程師執照並不分科，申請參加 PE 考試時雖會在前述十七類科擇自己所專長之類科考試，但考試及格後註冊時僅以「專業工程師」登錄即可，於執行業務時專業工程師均依照自己所專長領域之科別提供簽證服務，專長在於土木工程之專業工程師通常不會去作如電機工程或機械工程之簽證，若涉及跨領域或是介面之圖說，如該圖說簽證之專業工程師不只一位，則各該專業工程師會在圖說註明其所負責之部分，但如某專業工程師認為在其個人能力範圍有信心可以負責其他部分跨領域之圖說，獨立簽證跨領域圖說亦無不可，但如有所過失，則會受到州註冊委員會之懲戒制裁，且其未來之執業保險保費將會大為增加，信譽亦會受損。

有些州核發之專業工程師執照有分科，如加州專業工程師執照有分「土木專業工程師（Professional Civil Engineer）」、「電機專業工程師（Professional Electrical Engineer）」、「機械專業工程師(Professional Mechanical Engineer)」，例如申請參加加州 PE 考試時選擇土木工程科考試，考試及格後註冊時就僅能以「土木專業工程師」登錄。此外，加州尚有進階分科之規定，「結構專業工程師」及「大地專業工程師」為「土木專業工程師」之進階分科，「結構專業工程師」為具有「土木專業工程師」資格者加上至少三年結構工程工作經驗及參加加州註冊委員會所自行命題（非 NCEES 命題）之結構工程考試通過後始取得資格，「大地專業工程師」為具有「土木專業工程師」資格者加上至少四年大地工程工作經驗及參加加州註冊委員會所自行命題（非 NCEES 命題）之大地工程考試通過後始取得資格。加州對結構工程專業既規定為土木工程之進階分科，其關於「結構專業工程師」與「土木專業工程師」業務範圍便有分野規定，「結構專業工程師」可以設計任何形式之建築物結構，「土木專業工程師」可設計之建

築物結構不包括學校建築及醫院。

某些州對於分科則不採進階分科之垂直區分方式，而採水平區分方式，但對於該獨立分科有極為嚴格之資格要求。如伊利諾州除專業工程師執照外，因該州之特殊需要（位於伊利諾州之芝加哥市是以高樓建築著名的大都市），特別將結構工程師之執照核發、管理及稱謂獨立出專業工程師，結構工程師註冊員會與專業工程師註冊委員會為二個不同之管理單位。伊利諾州的結構工程師參加PE考試，嚴格要求工作經驗須與結構工程密切相關，除需通過「結構工程一」之八小時考試外，還需通過「結構工程二」之另外八小時考試才能取得結構工程師之資格。伊利諾州之結構工程師比加州的結構工程師劃定的專屬範圍更大，所有建築物結構之設計均專屬於結構工程師之執業範圍，其他專業工程師（包括一般土木背景之專業工程師）不得從事建築物結構設計。

我國在數年前，土木技師及結構技師對於建築物結構設計權曾有發生爭議，目前之技師執業範圍規定為結構技師設計建築物結構不受高度限制，土木技師除符合特定時間點前取得資格並於特定時間點前具有設計三十六公尺以上建築物結構設計經驗者外，僅得辦理三十六公尺以下之建築物結構設計。我國之環境處地震帶，以建築物高度是否屬高樓來區分建築結構設計範圍尚屬合理，但我國土木與結構技師主要以考試科目不同來區分，而未考慮經驗，同樣是土木系畢業的學生不論其是否曾具有高樓設計經驗，只需考取結構技師便可設計高樓，其實是不合理的，加州之垂直分工模式，即將結構技師規定為具一定結構設計經驗之土木技師，並另外加以考核始可取得資格之「進階技師」，似乎頗值得我國未來解決土木技師與結構技師對於高樓結構設計權之爭議。

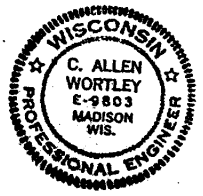
3.5.3 簽證規定

專業工程師之簽證，一般在州法中描述如下：

「有關專業工程之設計圖、計算書、規範及報告（統稱圖說）應由專業工程師本人，或在其本人專責監督（responsible charge of）下完成，

該等圖說應包含專業工程師之姓名及執照號碼。所有設計定案之圖說應由該專業工程師簽名（sign）及加蓋執業圖記（seal），同時標明簽證日期及執照之有效日期（expiration date）。」每一張設計圖都需簽證，計算書、規範及報告則至少必需於裝訂成冊之封面簽證。

專業工程師註冊執業圖記之型式，各州規定大致相同，大小或圖案可能會有些為差異，但一定會包含「州名」、「專業工程師」、註冊者之姓名及執照號碼，舉例如威斯康辛州之專業工程師註冊執業圖記如下：



基本上所有工程設計圖都必須要專業工程師簽證始得據以施工，不過許多州法規定某些簡單的結構物設計可免簽證，例如獨棟木造房屋高度在二層樓以下者、四個居住單位以下之木造聯棟房屋高度在二層樓以下者、木造房屋之附屬車庫、木造之農舍、沒有更動結構之房屋裝修等之設計等不需專業工程師簽證。現場施工製造圖（Shop Drawing）免簽證，監造（construction supervision）之施工圖說一般來說並沒有強制一定要專業工程師簽證，通常視該圖說有無與原設計圖不同而定，如有變更設計，變更設計之部分，需要專業工程師簽證以確定其安全性。

3.5.4 可免領執照（exemption）之工程師之規定

各州的法令均規定凡工程師個人直接對公眾提供服務並承擔工程之公共安全責任者，該工程師應領有專業工程師執照，美國目前有執照之專業工程師所從事之相關領域百分之九十以上是與「土木建築工程」有關之工程，主要因為土木建築工程相關專業工程師提供之服務係對大眾公共安全

負責。各州法令對於某些與公共安全有關之工程師可例外免領執照，例如：

（1）服務於美國政府單位之工程師（註：該等工程師雖可免領執照，但亦可申請執照，許多政府單位之工程師是領有執照之專業工程師）。

（2）服務於製造業（manufacturing corporation）之工程師。

（3）服務於公營設備事業公司（public utility or public service corporation）之工程師。

（4）在有執照之專業工程師指導下工作之工程師。

（5）服務於營造廠（contractor）之工程師（註：營造廠係按圖施工，其據以施工之設計圖說，則應由有執照之專業工程師所提供）。

3.5.5 換照及持續專業發展

美國專業工程師執照規定一定要換照，大部分是兩年換照一次，也有的州是一年（如德州）、或三年（如紐約州）、或四年（如加州），換照均要繳交費用，至於是否規定必須要有持續專業發展(Continuing Professional Competency, CPC，或 Continuing Professional Development, CPD）之時數（在我國稱訓練積分）始得換照，在美國目前尚無全國一致之規定，全美五十州中約有一半州於州法中強制規定要求換照時需檢具持續專業發展 CPC 時數證明，但亦有二十多州無規定要求換照需 CPC 時數證明，少數幾州對於 CPC 之規定雖無強制規定，但鼓勵專業工程師應有持續專業發展，以時常充實新知。

因為許多州對於 CPC 之規定不同，如此會造成持有多州執照之專業工程師換照之困擾，甚至會妨礙跨州執業，為了幫助各州註冊委員會制定統一的 CPC 標準，NCEES 也制定了一個「持續專業發展準則（Continuing Professional Competency Guidelines)」供各州參考，該準則建議專業工程師每年至少應有 15 小時之持續發展時數（Professional Development Hour, PDH)，PDH 可以藉由下列管道獲得：

（1）完成大學一學期之課程，依該大學之學期制而有不同之 PDH，如

semester 制的一學期可抵 45PDH，quarter 制的一學期可抵 30PDH。

（2）完成大學或機構所開設之持續教育課程（continuing education course），一梯次之持續教育課程可抵 10PDH（因為一梯次上課時數通常至少 10 小時）。

（3）完成函授課程、錄影教學或其他短期課程，依其實際小時數計算 PDH。

（4）出席專業研討會，依其實際小時數計算 PDH。

（5）從事上述（1）至（4）其中任何之教學工作，PDH 之計算為上述（1）至（4）之二倍，惟該教學工作僅第一次教學經驗可計入，往後重複性之教學不可計入，另外，此教學工作之時數並不適用於全職教師。

（6）出版書籍、發表專業文章，可算 10PDH。

（7）積極參與專業學會或公會之幹部，每任期可計 2PDH。

（8）發明專利，可算 10PDH。

以上 PDH 之計算係原則性規定，各州註冊委員會尚有實際審查核定權以決定適當時數，如為學校或機構提供之 CPC 課程，參加之專業工程師均會拿到相關文件證明，該專業工程師須妥為保存 CPC 之紀錄以利換照時使用。

是否應將 CPC 納入換照時之強制條件，事實上在美國也曾引起廣泛之討論與爭議，然而，美國其他專門職業如醫師、律師、會計師等也都已陸續納入 CPC 規定，且許多其他國家工程師之證照制度亦有類似規定，故目前 CPC 在美國已愈來愈普遍，NCEES 估計將來那未納入 CPC 規定之二十多州都可能陸續將 CPC 納入換照時之條件。

3.5.6 專業工程師公會學會

美國專業工程師有一個十分龐大的公會組織，稱為專業工程師全國聯合公會（National Society of Professional Engineers, NSPE），該公會

在全美五十州都有分支公會。美國大部分州之專業工程師均無分科，所以專業工程師公會亦無分科，在美國取得專業工程師執照執行業務並無硬性規定需加入公會，但是大部分專業工程師都會加入，加入的好處為專業工程師公會資訊充足，規劃有完整的訓練計畫、推廣計畫，能協助會員做生涯規劃、拓展業務，如果會員有執業相關法律問題，也可以迅速透過公會諮詢解決，公會與政府機關及立法機構之互動關係良好，會員的意見可藉公會的聲音適當的反應，加入專業工程師公會亦代表該專業工程師積極參與專業活動，對於該專業工程師之社會地位及聲望都有幫助。

NSPE 亦有出版許多幫助專業工程師業務發展相關之書籍，提供準備專業工程師 PE 考試考生之複習課程及複習教材，及舉辦許多技術研討會等，服務範圍相當廣泛。

各類科工程師亦有成立各自之工程學會，如美國土木工程師學會（American Society of Civil Engineers, ASCE）、美國機械工程師學會（American Society of Mechanical Engineers, ASME）、電機電子工程師學會（Institute of Electrical and Eletronics Engineers, IEEE）等，不過工程學會與專業工程師公會之主要目標不同，工程學會較以學術性為主，各學會都有出版聞名全世界之學刊，能被刊載於學刊上之論文可被認為具有世界水準。對於專業工程師之相關議題，工程學會亦有相當之關心，各工程學會與專業工程師公會、學術界、政府及業界均保持密切之聯繫。

為協助美國政府及民間委託工程技術服務能有一完備的契約範本可供參考，專業工程師全國聯合公會 NSPE、美國土木工程師學會 ASCE 及美國顧問工程師協會（American Consulting Engineers Council, ACEC）合組了一個稱為「工程師契約文件聯合委員會（Engineers Joint Contract Documents Committee）」，該委員會定期出版並修訂標準契約範本，廣被美國工程界引用，深具參考價值。

3.5.7 專業工程師倫理規範與行為準則

美國對於工程師之倫理（ethics）相當重視，專業工程師倫理規範發

展，可追溯至在 1947 年，當時工程師專業發展評議會（Engineers Council for Professional Development, ECPD, ABET 前身），首次對外提出倫理準則（Canons of ethics）。該文件於 1963 年經過修訂成為「專業工程倫理基本準則」與「倫理規範」，復於 1974 年繼續發展出一個新的工程師倫理守則，包含基本準則（Fundamental principles）、基本規範（Fundamental canons）及建議詮釋指針（Suggested guidelines for interpretations）等三個部分。其主要用意是希望各專業工程學會能採納基本準則及基本規範，再根據各學會的特性配合建議詮釋指針，發展出各個學會的倫理守則。

美國土木工程師學會（ASCE）、機械工程師學會（ASME）及礦冶石油學會（AIME）皆以 ECPD 提出之倫理守則為基本，發展各自之倫理守則，各學會並不斷更新其倫理守則以符時代需求，美國專業工程師全國聯合公會（NSPE）同時亦針對專業工程師之執業訂定其倫理規範。1970 年代初期，美國教育界開始重視工程倫理教育，大學陸續開授工程倫理相關課程，NSPE 並在 1976 年建議將專業素養（professionalism）之觀念納入工程師的課程中，NCEES 所出之專業工程師考試題目中，也都會包含一些倫理議題。

美國專業工程師執業倫理規範與專業工程學會之倫理守則內容相似，主要以專業工程師全國聯合公會（NSPE）制定之倫理規範為代表，該規範分基本準則（Fundamental canons）、執業規則（Rules of practice）及專業責任（Professional obligations）三大部分，該規範以六條基本規範為主軸，依基本規範擬定各實行規則，基本規範內容如下：

工程師在履行其專業職責時必須：

（1）維護公眾安全、健康和福祉視為最高原則。

（2）只能在能力範圍提供服務。

（3）以客觀且誠實的方式對公眾發佈聲明。

（4）為每個雇主或業主忠誠的代理人或受託人。

（5）避免欺瞞的行為。

（6）行事誠實、負責任、守倫理和守法紀，以提昇專業的聲譽和職業效能。

NCEES 為利各州註冊委員會能將倫理規範納入專業工程師之管理法規

中，使其具有法律約束力，亦有制定「專業行為模範準則（Model Rules of Professional Conduct）」供各州註冊委員會參考，目前美國阿拉巴馬州、德克薩斯州、威斯康辛州等皆將專業行為準則納入專業工程師之管理法規中，專業工程師如違反專業行為準則，便有可能受到該州註冊委員會施以懲戒處罰。

四、美國專業工程師制度之發展趨勢

4.1 專業工程師教育之發展趨勢

要取得參加專業工程師之考試資格一般各州是以EAC/ABET認證學程畢業之學士為主，不過近年來美國土木工程界對於土木背景之專業工程師，漸有一股聲音認為對土木工程師之專業養成教育要求應該更予提高，此股聲音以美國土木工程師學會（ASCE）為代表，ASCE 認為二十一世紀之土木工程環境較二十世紀更加複雜、變化更加快速，土木工程師需要更深更廣的專業知識，光是學士畢業之背景並不足以應付，該學會提出一稱為「提高標準（Raising the Bar)」的觀念，並將該觀念落實於其編號第 465 號之政策報告（Policy Statement 465)，該政策內容為：

「ASCE 支持執業土木專業工程師之教育要求需為碩士學位或同等於碩士學位程度（Master's degree or Equivalent）之觀念，ASCE 鼓勵高等教育機構、政府單位、雇主、土木工程師及相關專業機構支持並推廣土木工程師取得學士後應進一步教育，始得符合具有土木專業工程師之教育資格要求」

為了讓各界充分了解此一政策，ASCE 於 1999 年成立一專門小組從事了極為詳盡之調查研究，該研究包含將以往與目前土木工程教育課程之比較，及與其他專門職業人員之教育養成要求作比較，研究發現二十世紀初土木系的學生需要取得 145 至 160 學分始得畢業，目前土木系的學生卻僅需取得 120 至 135 學分就可畢業，學分數顯然減少許多，但未來卻要應付更複雜的環境；另外，ASCE 調查其他美國專業人員執業前所需的教育學程年數，如會計師需要五年，職能治療師需要五年，藥劑師需要六年，律師需要七年，醫師需要八年，土木專業工程師只需四年，亦屬較少，所以 ASCE 認為提高教育要求在將來實有必要。465 號政策之重點為「碩士學位或同等於碩士學位程度（Master's degree or Equivalent)，簡稱 MOE」，即未來要參加土木專業工程師第二階段 PE 考試前，至少應取得土木工程領域之碩士或具有同等於碩士學位之學分數，有關同等於碩士學位程度部分，照目

前 ASCE 之構想係大學後再取得至少相當於三十學分之進修證明。ASCE 為推廣此一構想，已正式成立一稱為「專業執業教育要求委員會(Task Committee for Academic Prerequisites for Professional Practice, TCAP^3)」以利執行，TCAP^{3}將對「專業知識主體/課程 (Body of Knowledge/Curricula)」、「認證 (Accreditation)」、「執照 (Licensure)」等方面深入研究並提出配套計畫，目前 TCAP^{3}之主席即為我在威斯康辛州立大學麥迪遜校區之指導教授 Dr. Jeffery Russell，Russell 教授認為推動 MOE 現在看起來好像只是理想，且勢必會有反對之聲浪，但為了提高未來土木專業工程師之教育水準，應該堅持此一理想，且事實上有甚高比例之專業工程師是具有碩士以上學位的，MOE 只是將此一現象化為具體要求，目前已有許多州註冊委員會對此議題表示興趣，且獲得專業工程師公會 NSPE 支持，其他科別之學會如機械工程師學會 ASME 及電機電子工程師學會 IEEE 亦表示有興趣推廣此一觀念至電機、機械專業工程師，雖然短期內應不會立即實行 MOE，但未來將會日益普及並有實行之可能。ASCE 設定之目標為希望於 2020 年能夠實行 MOE，在 MOE 生效前之專業工程師之教育要求並不會受到影響。

個人之感覺為美國專業工程師教育之發展趨勢實在是超乎想像，要求專業工程師須具有碩士學位以上始得報考之觀念如果移植到國內，相信反對的聲浪絕對遠超過美國，不過美國此方面現在亦屬萌芽階段，後續發展值得觀察，如果其實行確有成效，多年以後我國也許可以試著引進此觀念再作探討。

4.2 專業工程師考試之發展趨勢

數年前專業工程師之 PE 考試有申論及計算題，這二年 PE 考試卻都改為選擇題，NCEES 認為如此較為客觀，可避免改考卷者之主觀意識影響考生的分數，惟此一改變初期引起不少的批評，某些州註冊委員會認為測不出考生是否真正了解公式理論並加以運用，可能會鼓勵考生猜題或湊答案，根據 NCEES 統計猜題雖不可避免，惟可能猜對之題數對於考試結果影響不大，而湊答案部分，如果對於題意沒有充分了解，僅將題目出現之數字排

列組合是很難湊出答案的，NCEES 之委員均表示 PE 考試是為測出考生之執業基本能力（Minimum Competency），而非難倒考生或造成考試結果之不客觀，故其已全面改為選擇題以避免閱卷者之人為因素，又因為全面改為選擇題之緣故，NCEES 已在研究以電腦上機考試（Computer Based Testing, CBT）之可行性，將來 PE 考試有可能類似托福（TOFEL）考試方式，每位考生皆坐在一台電腦前作答。

我國之技師考試出題方式多年來一向是以計算題或申論題，其實選擇題如果透過適當的題數及命題方式，一樣可以測出考生程度，且電腦閱卷的好處可以排除人為閱卷之不客觀因素，減少閱卷人力及時間，建議考試院將來可以研究將技師考試題目改為選擇題方式。

另外，美國學界目前亦非常重視大學教育之成效評量（Outcome Assessment），如何評估一個大學生畢業時獲得之學習成效，許多學校都在建立評估方法，NCEES 提出其實在工程教育方面最有效的評估方法便是要求工學院學生參加專業工程師第一階段 FE 考試，FE 考試不僅可以測驗大學前二年之基礎知識，亦可測驗大學後二年之專業知識，更可鼓勵學生進一步參加 PE 考試取得執照。NCEES 推廣 FE 考試的努力近年來已獲得不少大學之迴響，有一些大學已將通過 FE 考試當作通過學習成效評量的方式之一。

4.3 專業工程師執業之發展趨勢

早年因為各州對於專業工程師資格取得之要求不同，甚至跨州執業都有困難，近年因為各州對於專業工程師之資格要求漸趨一致，NCEES 之模範法開始建立一「模範專業工程師（Model Engineer）」之標準，Model Engineer 之條件為需經 EAC/ABET 認證之學程畢業、有四年以上之工作經驗、通過 FE 及 PE 考試，Model Engineer 之觀念經過 NCEES 大力推廣，已為大部分州所接受，如某一 Model Engineer 想要跨州執業，幾乎到全美任何一州都可行，NCEES 並成立一統合資料庫，協助提供想要跨州執業之專業工程師之資料給州註冊委員會，不過該資料庫並非強制登錄而係由符合條件之專業工程師自願登錄，且要收費。

隨著世界貿易自由化之趨勢，世界貿易組織（World Trade Organization, WTO）之興起，各國均陸續簽署自由貿易協定，許多國家開始對專業工程師跨國提供服務之議題產生興趣，於1980年代中期以後，美國與加拿大簽署自由貿易協定，隨後墨西哥亦加入，三國簽署北美自由貿易協定（North American Free Trade Agreement，NAFTA），當時NCEES體會到專業工程師之國際移動之趨勢，便於美國簽署NAFTA後，發起成立「美國國際執業工程師委員會（United States Council for International Engineering Practice, USCIEP）」，USCIEP是由NCEES為首，聯合學術認證單位ABET、專業工程師公會NSPE及美國工程顧問公司協會（American Council of Engineering Companies，ACEC）所聯合組成，其目標係為協助美國專業工程師進軍國際執業，USCIEP並獲得美國聯邦貿易代表辦公室（Office of the U.S. Trade Representative）授權代表美國在WTO內談判有關工程師國際移動相互認許協定之單位，但由於USCIEP屬非官方性質，且美國專業工程師之管理權分屬各州註冊委員會，USCIEP所簽署的協定尚無法約束全國所有州，需視各州是否同意協定內容而定。

USCIEP參加的國際性組織有北美自由貿易協定（North American Free Trade Agreement, NAFTA）、亞太經濟合作會議（Asia Pacific Economic Cooperation, APEC）及泛大西洋經濟合作會議（Transatlantic Economic Partnership, TEP）等，針對工程師國際間資格同等性之認證議題，USCIEP為APEC內人力資源發展小組下所附設之APEC工程師專案計畫（APEC Engineer Project）及國際工程師論壇(Engineers Mobility Forum, EMF)之會員，並於2001年經APEC工程師協調委員會(APEC Engineer Coordinating Committee)和國際工程師論壇協調委員會(EMF Coordinating Committee)授權其設立美國分區。USCIEP專業工程師之國際註冊於2002年1月開始實行。

USCIEP註冊之概念為：於該國際註冊處(International Registry)登錄之美國專業工程師，將被紀錄其符合特定專業資格，可獲得承認具有專業工程師資格之同等性，於APEC工程師和國際工程師論壇(EMF)之中的會員經濟體間移動。登錄者僅獲得同等性的資格，目前仍無法自動地獲得於

APEC 工程師或 EMF 各經濟體的登記處對於其執業資格的認可，而需要經過該經濟體的執照核發單位之再評估審核程序認定符合其規定，方能獲得該經濟體之執業資格。

對於 USCIEP 專業工程師資格註冊的申請程序，申請者首先須擁有專業工程師執照並對美國單一或多州行政區的規定有良好的認知。同時須符合下列資格要求：

（1）具備認可的工程學位(EAC/ABET 的認證)；

（2）已經通過由 NCEES 所安排的基本工程知識考試(FE)；

（3）已經通過由 NCEES 所安排的工程理論與實踐考試(PE)；

（4）必須沒有被任何管轄機關暫停或撤銷其工程執業執照。

除此之外，關於 USCIEP 註冊機構的申請資格尚須合乎其他附加的評估要求：

（1）畢業後至少 7 年的專業實務經驗；

（2）至少 2 年負責主持重要工程的經驗；

（3）遵守 NCEES 之持續專業訓練(CPC)規定；

（4）符合專業實踐規範。

對於已登錄的 USCIEP 專業工程師，每年還須接受 USCIEP 監督委員會的稽核，依據專業工程師的經驗更新報告，確認是否符合持續專業訓練的要求，以及滿足專業實踐的持續紀錄，稽核於登錄後第三年開始實行。

目前許多國家對於專業工程師國際間之移動均展現高度興趣，陸續開始建立統一標準之認證平台，USCIEP 相當於為美國專業工程師爭取跨國執業機會的窗口，我國亦應及早建立一類似 USCIEP 之窗口，積極參與相關國際活動。

五、美國工程相關專門技術人員之介紹

5.1 建築師

類似專業工程師之資格養成要求，在美國要成為一位註冊登記的建築師之前，會被要求同時符合：

（1）具有建築學位或相當之專業。

（2）相當時間的實務訓練或實習。

（3）通過建築師註冊考試

等三個條件，方得為之。

5.1.1 建築師之資格取得及管理

在許多州裡，建築的專業學位必須由國家建築師認證委員會(National Architectural Accrediting Board, NAAB)（性質類似 ABET）所認可課程的建築學校取得。但各州建築師註冊委員會亦多設有自己的標準，例如某些州對一個非 NAAB 認可課程學校裡畢業的學生，也可能符合該州申請證照時有關教育方面之規定。

國家建築師註冊評議委員會（National Council of Architectural Registration Boards , NCARB）之性質則類似專業工程師之 NCEES，NCARB 不是政府機關，為各州建築註冊委員組成的全國性組織，該組織之負責人及主管皆由各州委員會選舉產生，以擬定相關規定及政策，並與各州委員會結合，制定全國通用之建築師的認証標準（Certification Standards)。

由於美國各州的情況不一，專業建築教育方式及課程內容皆不相同，NCARB 亦訂定一個全國可行的方式來測定建築師資格，取得的條件與實務訓練，皆由 NCARB 擬定相關要求，並由其策劃辦理，NCARB 之主要服務項目為：

（1）辦理實習發展計畫（Intern Development Program, IDP)。

（2）建築師註冊考試（Architect Registration Examination, ARE)。

（3）美加兩國相互認許（Reciprocity)。

（4）認証（Certification）。

（5）專業進修教育（Continuing Education）。

美國建築師要在各州執業，必須向各州委員會申請註冊登記，目前 NCARB 正在整合各地對註冊登記需求的一致性，使建築師在取得註冊登記時，能更方便而不需要額外的教育、訓練與考試，只要取得 NCARB 各方面標準認可與證明即可取得資格，但仍須向各委員會註冊登記。

美國專業工程師及建築師執業資格之取得有許多類似之處，以下為一簡要比較表：

	專業工程師	建築師	備註
執業管理及執照核發機關	州註冊委員會(State Board of Registration for Professional Engineers)	州註冊委員會(State Board of Registration for Architects)	某些州專業工程師與建築師屬同一註冊委員會，一般情形為專業工程師與專業土地測量師（professional land surveyor）屬同一註冊委員會
學歷要求	大部分州要求需經 Accreditation Board for Engineering and Technology(ABET)認證之學位，如非經 ABET 認證之學位則需較長之工作經驗	大部分州要求需經 National Architectural Accrediting Board(NAAB)認證之學位，如非經 NAAB 認證之學位則需較長之工作經驗	ABET 及 NAAB 均非政府機關，為具有公信力之民間組織
經歷要求	畢業後及通過「工程基本原則考試(Fundamentals of Engineering Examination)(FE)」，便可稱為 Engineers in Training(EIT)或 Engineer Interns(EI)，需在有照專業工程師指導	畢業後在有照建築師指導下（有些州接受在相關專業工程師指導下）參與「實習發展程序(Intern Development Program)(IDP)」，以取得州註冊委員會認可之 IDP 點數，一般約需三年方可完成 IDP 訓練	大學工程科系課程一般為四年，建築系課程一般為五年，建築 IDP 訓練涵蓋各方面建築實務，其工作時數可換算成點數

	專業工程師	建築師	備註
	下累積至少四年工作經驗		
考試要求	考試分為二階段，分別為「工程基本原則考試(Fundamentals of Engineering Examination)(FE)」及「工程原理與實踐考試(Principles and Practice of Engineering Examination)(PE)」，須先通過 FE 考試並經州註冊委員會認可其學歷及經歷後方可參加 PE 考試，考試題目係由 National Council of Examiners for Engineering and Surveying(NCEES)命題，均為選擇題型式，由各州註冊委員會選擇場地舉辦考試，FE 及 PE 考試一年均舉辦二次（四月及十月）	考生經州註冊委員會認可其學歷及經歷後即可參加「建築師註冊考試(Architect Registration Examination)(ARE)」，考試題目係由 National Council of Architectural Registration Boards (NCARB)命題，ARE 分為九大部分(9 divisions)，六部分為選擇題型式，三部分為繪圖題型式，各部分考試可分別參加，均以電腦作答，一年中任何時間（假日除外）均可參加其中一部分考試，但該部分若未通過，須等六個月才能再考該部分	NCEES 及 NCARB 均非政府機關，為具有公信力之民間組織，該二組織之委員會成員則由各州註冊委員會指派代表組成，定期開會交流管理經驗
取得執業資格	通過 PE 考試後，向州註冊委員會繳費申請並領取執照	通過 ARE 所有部分考試後，向州註冊委員會繳費申請並領取執照	需定期換發更新執照

5.1.2 建築師與專業工程師之比較

一般並非土木工程背景的人，常常會搞不清楚建築師與土木工程師有何不同，在美國緬因州的一個判例中，該州最高法院稱建築師「基本上為具有美學訓練之工程師」，並定義建築師提供之服務主要係設計「供人居住或使用之建築物，且要求外觀美學造型者」，如住宅、學校、醫院、旅館、展示館等。由於建築師所受的工程訓練，與專業工程師所受的工程訓練，在科目上有一定重疊，如建築師亦修過「結構設計」、「機電設備設計」等科目，因此建築物之整體設計，有時很難切割建築師與專業工程師之工作範圍，在建築物之造形設計方面，由建築師來主導絕對沒有問題，但針對建築物結構與設備設計方面，雖然大部分州法似乎沒有明確規定建築師一定需要將結構與設備設計委託給專業工程師設計，建築師還是會視其能力範圍將專業工程部分委託專業工程師辦理，但建築師仍要負整合整體建築功能之責任。至於專業工程師是否可做建築物設計，有些州如喬治亞州可以允許工業廠房僅由專業工程師設計而可免由建築師設計，其原因可能為工業廠房較不著重造型美觀及居住使用功能。

5.2 專業土地測量師

美國測量從業人員約可分為土地測量師(Land Surveyor)、製圖師(Cartographer)、航空測量師(Photogrammetrist)、測量士(Surveying Technician)等。專業土地測量師(Professional Land Surveyor)須取得州註冊委員會(State Board of Registration for Professional Land Surveyor)核發之執照，地界、空界、水界劃定之法定文件必須由其簽署。其他如製圖師、航空測量師、測量士等，則由相關專業團體核發檢定證書(certification)，某些州要求航空測量師亦須取得專業土地測量師執照。

專業土地測量師之資格取得方式與專業工程師類似，考試題目同為NCEES所出題，考試方式亦為二階段，第一階段稱為基本土地測量知識考試(Fundamentals of Land Surveying Examination, FLS Exam)，在參加FLS

考試之前，需經註冊委員會審查具有適當的教育學歷始得考試（ABET 亦有對測量教育認證），通過 FLS 考試者，稱為實習測量師（Surveyor Intern），第二階段考試稱為土地測量理論與實踐考試(Principles and Practice of Land Surveying Examination, PLS Exam)，在參加 PLS 考試前，需經註冊委員會審查具有適當的工作經驗（二至四年不等），及繳交數份由了解申請考試者工作經驗之土地測量師所寫的推薦信始得考試，通過 PLS 考試即可取得專業土地測量師之執照開始執業。

測量業務一般在各州州法內之定義包括從事等高線製作、大地測量、航空測量、地球物理測量、設置控制點參考點、製作土地資訊系統及地理資訊系統、標定地界路權不動產範圍等。

在工程測量方面，專業土地測量師與專業工程師之工作範圍可以重疊，專業工程師亦可以執行工程測量，工程測量係指專業工程師於其從事規劃、設計、施工、維護、運轉等工程業務時所涉及測量行為，但與不動產地界、路權、公共土地等有關之測量鑑定報告及法院請求協助提供與測量有關之專業證詞(expert testimony)則限定一定要專業土地測量師始得為之。

5.3 景觀建築師

美國對於景觀方面頗為注重，相關專門職業人員稱為景觀建築師（Landscape Architect），約有四十六州要求從事景觀設計者需領有景觀建築師執照，各州定義景觀建築師之執業內容頗廣，大致包括土地資源及水資源之調查、土地利用概念設計、土地發展計畫、自然資源保育、環境評估、坡地開發、排水、灌溉、植栽計畫，及道路、橋樑系統之區域美化計畫等，有點像我國都市計畫技師、土木技師、水土保持技師、園藝技師之綜合，還須有與建築師類似之美學素養，不過其分析設計內容通常不包括細部水力計算及結構設計。很多都市更新、國家公園或自然保護區之保育計畫，及大型商業區、工業園、住宅區、購物中心等之先期總體規劃設計，均要求景觀建築師之參與以求自然環境與人為環境之協調平衡。

美國景觀建築師之管理及資格取得方式亦與專業工程師、建築師、專業土地測量師等類似，執照係由各州景觀建築師註冊委員會（State Board of Registration for Landscape Architects）核發，大部分州要求需經景觀建築認證委員會（Landscape Architectural Accrediting Board，類似專業工程師之 ABET）認證之學位（有五十八所大學的學士或碩士課程通過認證，一般取得大學學位約需四至五年），並且要求需在領有執照之景觀建築師指導下一至四年之實務經驗（各州要求不同），然後要通過州註冊委員會所舉辦之景觀建築師註冊考試（Landscape Architect Registration Examination, LARE）始取得執照，該考試的題目係由 Council of Landscape Architectural Registration Boards（類似專業技師之 NCEES）所統一命題，有的州除了考 LARE 外，還會加考一小時有關該州相關法令及地理環境知識之小型考試。

約有四分之一的景觀建築師係自行開業，其餘景觀建築師為建築公司、工程顧問公司、土地開發公司所雇用，州政府及聯邦政府亦雇有為數不少之景觀建築師。

六、美國工程技術服務業及營造業之管理制度

6.1 工程技術服務業

6.1.1 工程技術服務公司之管理制度歷史

最早美國提供工程技術服務是由專業工程師獨資或合夥（類似我國之技師事務所或聯合技師事務所）所提供，後來漸漸發展為一般公司亦可執行工程技術服務，參考美國著名學者Robert F. Cushman於其所著「Design Professional's Handbook of Business and Law」書中所述：「由於工程計畫之複雜度及規模日益增加，僅由傳統獨資或合夥之機構提供工程設計服務便日益困難。當專業機構大型化、執行計畫涉及多重領域、及欲經由分佈於國內之各分支機構執行業務時，公司組織有其顯而易見的優點。然而，經由公司組織提供工程設計服務，曾是一個爭議性議題。」

自從1921年第一個州於其工程執照法令中准許公司提供工程技術服務後，有關公司執行工程技術服務之主題曾被廣泛討論與辯論。最早僅開放由工程相關之專門技術人員組成專業服務公司（professional service corporation）提供工程技術服務，所謂專業服務公司是由專業人員（如律師、醫師、會計師、專業工程師、建築師）利用其適合的聯邦稅法及退休福利法令所組成的公司，專業服務公司之經營權（擁有及轉移股權、於公司擔任高級職員、董事會成員）僅限於有執照的專業人員，當開放工程專業服務公司提供工程技術服務時，尚無引起廣大爭議，但於各州陸續開放商業公司（business corporation）可提供工程技術服務後，工程界便產生許多討論之聲音。因執行工程技術服務涉及個別執業者之高度專業教育、執業經驗及技術能力，最初之爭議在於專業工程師認為公司無法有以上特質，除非其主要成員能具有提供如此服務之能力，有些人擔心准許一般公司執行工程工程技術服務業務會導致專業工程師失去其執業時之獨立判斷能力，有些人擔心由非工程背景的人組成之一般公司會使工程師失去對工程技術服務之主導，危害大眾之健康及安全，有些人則擔心當工程師的專業責任

與公司的利益衝突時的倫理責任問題。

最初倡議一般商業公司可提供工程技術服務者，包括從事公共工程的大型營造公司，及從事涉及規劃、設計及施工的「設計－建造(design-build)」公司。1940 年代後期及 1950 年代前期，在紐約州，一群商業公司希望解除該州工程執照法令中對於一般公司從事工程技術服務的限制，組成名為工程法律委員會 (Committee on Engineering Laws)，於 1953 及 1954 年致力推動立法解除紐約州對一般公司執行工程技術服務的限制，該努力最後雖未成功，但於 1983 年，另一對公司提供工程技術服務有相同限制法令的俄亥俄州已取消限制，剩下紐約州成為極少數對一般公司從事工程技術服務有嚴格限制的州之一。

NCEES 於 1950 年代後期在其建議之模範法 (Model Law) 中通過認可專業工程師於公司中執行工程技術服務業務，建議規定「該專業工程師須為其專業行為負法律責任」及「所有代表公司對外執行工程技術服務的人員須為註冊專業工程師或符合豁免須為專業工程師條件之人員」。現行 NCEES 模範法中之條文建議規定准許一般商業公司執行工程技術服務業務，只要其公司內直接掌控或監督工程技術服務之人員及所有代表公司對外執行專業工程技術服務的人員領有專業工程師執照，且該公司須領有由州註冊委員會核發之特許證 (certificate of authorization)。惟 NCEES 模範法認為不管專業工程師與公司的受聘關係或其他關係為何，都不能免除其提供工程技術服務之專業責任。

美國專業工程師全國聯合公會 (NSPE) 第 74 號政策 —「專業工程執照—公司執業」亦認為，專業工程師有選擇經州法准許執業之任何型態商業組織之權利，公司提供工程技術服務在符合下列條件及限制下應被允許：

1. 所有代表公司之工程專業技術服務工作須由專業工程師執行或在其直接監督下執行。
2. 所有執行工程技術服務之公司須先經由該州註冊委員會核發特許證，該特許證應定期換發。
3. 州註冊委員會有權撤銷提供工程技術服務公司之特許證，當其發現公司高級職員或董事引導或允許不符州執照法令執業資格的人執行

工程技術服務，或違反州註冊委員會規定之任何法令或規範時。

現今美國工程界大多認為專業工程師於商業公司執行技術服務業務有許多實際優點。商業公司型態允許專業工程師、其他專業人員及非專業技術服務提供者共同參與，使得公司的管理及營運有更好的整合；商業公司有重要的稅賦及員工福利計畫優點，這些優點可使公司吸引、補償及留住其員工及保持競爭力；商業公司亦可於私人或公開場合吸引及增加資本、發展財務能力及持有執行大型計畫之必要資源；商業公司藉著較廣泛的所有權及管理選擇性，提供了更大的彈性以確保企業永續經營。所有允許商業公司提供工程技術服務的州均強調個人責任之議題，各州工程執照法均規定，不管商業公司提供何種工程技術服務，該服務工作均應由有執照的專業工程師負個人法律責任，且該工作須在專業工程師直接控制或指導監督下執行以確保公共安全。

6.1.2 提供工程技術服務公司之型式

目前大部分州規定可提供工程技術服務之公司（firm）有四種：

（1）專業服務公司（professional service corporation），法令依據為 Professional Service Corporation Act。

（2）一般股份有限公司（corporation 或 business corporation），法令依據為 Business Corporation Act。

（3）合夥事業（partnership）包含有限合夥（limited partnership）及有限責任合夥(limited liability partnership)，法令依據為 Uniform Partnership Act 或 Revised Uniform Limited Partnership Act。

（4）有限公司（limited liability company），法令依據為 Limited Liability Company Act。

以上四種公司都要先向各州當地的專業工程師註冊委員會或專業工程師及測量師註冊委員會申請提供工程技術服務之特許證（certificate of authorization）（類似我國之技術顧問機構登記證），才可登記為公司。提供工程技術服務之公司都需指派「管理代表（Managing Agent）」，此人須由董

事會（board of directors）指派，不一定為董事長（chairman of board of directors）或總經理（general manager），有可能為一般技術經理，管理代表須為專任，負責與註冊委員會聯繫有關公司證照或業務變更事項，全面監督公司之工程業務及專業工程師與其他工程師所提供之工作，並建立及遵守符合專業工程師法令之公司政策。

獨資事業（sole proprietorship）（類似我國技師事務所）因其負責之專業工程師已有執照，故可不用向州註冊委員會申請特許證，另外專業協會（professional association）因其目標為服務會員非提供工程技術服務，故也可不用向州註冊委員會申請特許證。

6.1.3 公司成員需為專業工程師之規定

大部分州對於工程技術服務公司成員需為專業工程師之規定如下：

（1）專業服務公司（professional service corporation）（包括外州之專業公司）：股東（shareholders）、高級職員（officers）、董事（directors）、代表（agents）及員工（employees）全都需為有執照之專業工程師、測量師或建築師（當然負責人亦屬其一），此類公司應由董事會指派至少一位專業工程師或測量師擔任管理代表。

（2）一般股份有限公司（business corporation 或 corporation）：至少一位以上之董事（directors）及高級職員（officers）擔任負責工程業務之管理代表且其須為專業工程師，此管理代表經董事會決議產生。

（3）合夥事業（partnership）：至少一位以上之合夥者（partner）擔任負責工程業務之管理代表且其須為專業工程師，此管理代表經所有合夥者決議推舉之。

（4）有限公司（limited liability company）：至少一位以上之成員（members）須符合證照要求（即成員如為自然人，則須為專業工程師；如為法人則須符合上述（1）至（3）之相關規定），並至少一位以上之成員（members）及經理人（managers）擔任負責工程業務之管理代表且其須為專業工程師，此管理代表可經公司與其書面訂約產生。

根據國家工程及測量考試委員會（NCEES）2000 年資料統計，美國大部分州對於提供工程技術服務公司（包含各種型態）之經營者（onwners）資格並無嚴格限制，有七州要求經營者中至少有專業工程師一人以上（加州、佛羅里達州、喬治亞州、印第安那州、奧瑞岡州、田納西州、猶他州），有二州規定經營者中需有一定比例為專業工程師（俄亥俄州要求經營者二分之一以上需為專業工程師、土地測量師、建築師或景觀建築師，北卡羅萊納州則要求三分之二以上，但該二州並無限制負責人需為專業工程師），而規定所有經營者，包括公司負責人需為專業工程師者只有紐約州、佛蒙特州二州及首府華盛頓特區（佛蒙特州及首府華盛頓特區規定僅有專業服務公司才可以提供服務，紐約州雖沒有規定公司型態一定要為專業服務公司，但是規定負責人一定須為專業工程師）。

雖然紐約州、佛蒙特州及華盛頓特區規定公司負責人必須為專業工程師，但是其他各州除部分對經營者（非負責人）有某些資格限制外，均無限制負責人資格，且據悉許多州已在陸續進行修法放寬經營者資格規定中，而國家工程及測量考試委員會（NCEES）及美國專業工程師公會全國聯合會（NSPE）之政策亦皆不贊成如此規定，相信在同儕壓力及潮流下，該三區不久很可能就會修改負責人需為專業工程師之規定。

上述所介紹為以專業工程師為主體之工程技術服務公司，建築師提供建築類之工程技術服務所能設立之公司型態大致與上述相同，建築師亦能與專業工程師合組工程技術服務公司。

6.1.4 專業責任險

專業責任險（professional liability insurance）又稱「錯誤及疏漏保險（errors and omissions insurance）」，就像醫師、律師、會計師等專業人員一樣，在美國亦有許多保險業者提供專業責任保險予工程界之建築師及專業工程師。

當建築師及專業工程師（美國一般合稱為「專業設計人員（design professionals）」）因其提供之專業技術服務之疏忽行為（negligent acts）、錯

誤（errors）或疏漏（omissions）造成第三者（third-party）之損失（damage），如第三者對其要求索賠(claim)，承保之專業責任保險公司便需償付有關專業設計人員所應負法律賠償責任中之金錢損失，保險公司並有幫助專業設計人員對索賠訴訟進行辯護（defend）之責任。「疏忽行為、錯誤或疏漏」例如提供不適當的設計或規格計畫、不恰當的專業意見、測量錯誤、未能符合一般合理的設計規範等，有時很難認定，而須藉另外客觀的專業團體或個人提供專家證詞（expert testimony）以供法院判定，保險公司亦會進行調查。「損失（damage）」包括財產損失（property damage）、身體傷害（bodily injury）、經濟損失（economic loss）及有關法律上之費用（legal expenses），但不包括專業設計人員違反法令之罰金、未被業主給付之報酬或業主施以之罰款。

美國專業責任保險有兩種方式，一種稱為執業型保險（practice policy），此種保險是以年度（曆年，一月一日到次年一月一日）計算保險期，被保險者可以是專業設計公司或個人，以公司名義保的，可以只列公司為被保者，每年保額上限（limit）平均是一百萬美元（以公司投保者之保額與個人執業投保者不同，公司保額通常高於此值），該年可用保額於當年內隨著索賠案件之使用而減少。另一種為專案計畫型保險（project policy），此類保險可保障業主及計畫內所涉及之所有相關專業設計公司，而非保障單一設計公司，保險期及保額上限由被保險者與保險公司議定，保障之期間通常涵蓋計畫之整體期間及計畫完成後一段合理時間。

專業責任保險運作是建立在一稱為「索賠提出（claims-made）」或「索賠提出及通告（claims-made and reported）」模式上，若某年度有一索賠案件對被保險之專業設計人員或公司提出，該專業設計人員或公司必須在該年度保險期內或保險契約所定之有效追溯期內向保險公司通告方為有效，即保險公司只負責在有效通知期內其被通知之索賠案件，而非視造成該索賠案件之事件發生之時間，就算該事件發生在保險期內，如未按規定時間通知保險公司，保險公司便不會負責該事件之賠償。重點在向保險公司提出索賠案件通告之時間點，而非造成索賠案件之事件發生之時間點。

保費或保險費率通常視各保險公司之競爭策略而定，有時也受到市場

的影響，保險涵蓋之內容也常常變動，故保費之計算較難找到一定數據資料，然主要與專業設計人員或公司以下之因素有關：要求之保額及自付額（deductible）、公司大小、經營狀況、財務狀況、服務項目內容、服務地點、主要顧客、保險歷史（出險紀錄）等。至於專業責任保險之費用佔專業設計人員或公司經常費用之比例，美國最近曾有非正式研究指出建築師使用於專業責任保險之費用約占其總支出百分之三，結構工程師使用於專業責任保險之費用約占其總支出百分之六。

美國法律並沒有規定專業設計人員或公司一定要投保專業責任保險，但大部分專業設計人員或公司都有投保，許多大型計畫之業主亦會要求提供服務的專業設計人員或公司投保並加保計畫型專業責任保險，其原因不外乎美國人極重視其法律上的權益，只要其認為權益受到損害，提出訴訟或索賠十分平常，有的案件要求賠償金額相當龐大，訴訟費亦很可觀。美國工程界及法律界均認為「沒有完美的設計（there is no such thing as error-free design）」，設計案件或多或少會有錯誤或疏漏，如因此造成可觀損失引致索賠案件，一般設計公司並沒有很大的財力足以負擔，專業設計人員或公司基於風險管理（Risk Management）之觀念，為求自保同時亦可讓業主安心，故多會主動投保專業責任保險。

6.2 營造業

美國對於營造業之管理並不像工程技術服務業全國各州均要求領有特許證及設有專門技術人員執行業務，根據統計，美國約僅有二十多州對營造業設有特別的管理規定及須領有特許執照，例如威斯康辛州、紐約州、馬里蘭州等均無營造業管理法規，而加州、佛羅里達州則有嚴格的營造業管理法規。對於營造業管理之州設有營造商管理委員會（Contractors Board）專門管理營造業的法規與證照，合格營造商並不需聘有專業工程師，但申請人需通過考試及提出適當財力證明。以下以加州為例加以說明：

加州營造業管理制度

（一）概述

根據加州營造商證照法（Contractors License Law）的規定。在加州境內從事任何包括建築物、高速公路、道路、停車場、鐵路或其他結構性構造物的興建，其合約總金額（員工及材料）若超過 500 美元以上，則必須取得加州營造商證照委員會（Contractors State License Board, CSLB）的許可證照才能執業，營造商的執照可以發給個人、合夥人、公司或聯合承攬公司。任何營造商，包括分包商、專業營造廠或個人等從事建築物的改善時，必須在得標前取得執照。

（二）營造業註冊主管機關

加州營造商證照委員會 CSLB 隸屬於加州的消費者事務部，該委員會共有十五個委員，其中包括九個公部門委員、五個營造商委員和一個勞工代表。

CSLB 主要的工作內容如下列幾點：

（1）確保工程是在一個安全、合適且專業的態度下完成。

（2）核發營造業執照和執行執照法律。

（3）要求營造工程合約之執行需要執照。

（4）貫徹法律、法規和標準使工程合約在一個平等、統一的做法下。

（5）工程糾紛時提供解決方案。

（6）教育消費者作適當選擇。

CSLB 針對調查消費者對營造商的抱怨（complaint），則成立州調查欺騙團隊（Statewide Investigative Fraud Team，SWIFT），致力消除在加州無執照的營造商，杜絕地下經濟，提供各種服務，讓大眾知道營造業的相關資訊。目前加州共有 278,000 家營造商。

（三）營造商資格申請條件

（1）資格考試

營造商證照之申請人，需要通過法律與商務考試（Law and Business Examination）及專業證照領域的考試。

（2）實務經驗

在考試前必須擁有至少四年的實務經驗，實務經驗包括工人（非學徒）、領班、監工或承包商。實務經驗的確認是由一個具有資格的人負責，

如業主、工作同事、其他營造商、公會代表、監工、建築師或工程師等，他們需確實了解申請者所填列之實務經驗，不得欺瞞僞造。

（3）教育經驗

取得加州營造業執照不須任何的教育背景，若擁有技術訓練或教育等背景則可將相關證明提出替代工作經驗，但工作經驗不能全部替代，至少需有一年是實務經驗。

（4）財力證明

至少需具備 2500 美元以上之經營資本，並向 CLSB 提出至少 7500 美元之債券（Bond）或現金押金（Cash Deposit）證明。

（5）保險證明

需證明已依加州州法投保工人薪資保險（Worker's Compensation Insurance）。

（四）執照效期

加州營造商執照需每二年更新（renew）一次。

（五）營造商分級制度

CSLB 根據承包方式將營造商分為三種，分別是 Class A-一般工程總承包（General Engineering Contracting）、Class B-一般建築總承包（General Building Contracting）、Class C-特殊工程承包（Specialty Contracting）等三種，其中特殊工程承包還包括了三十九種不同類別的營造商。

6.3 工程技術服務業與營造業之結合

美國結合工程技術服務業與營造業的統包工程最早可以追溯到 1913 年克利夫蘭的奧斯丁公司所建造之美國第一座電燈廠。採用統包方式承攬之工程，其規模從數十萬至數億美金規模之工程都有。早期的統包工程多為美國的石化工業建廠工程，例如化工廠、礦場、水泥廠與物料輸送系統等，多採用統包方式辦理，但自 1968 年後，統包應用在小規模及簡單之工程上已經陸續成功之案例越來越多，1980 年代已擴至一般工程及公路興建。

統包制度在美國公共工程的應用，以往曾經受到很大的限制，歸結其

中主要因素包括：(1) 競標法令（工程案需採最低標）的限制；(2) 政府部門決策系統混淆；(3) 與傳統上為業主、設計顧問與承包商之間必須相互制衡的觀念抵觸；(4) 工程業主與統包商之間缺乏公平分擔風險的辦法；以及 (5) 相關執照法規構成的實質障礙（如少數州規定工程專業服務公司不得作營造業務）等等。但近十年來已有很大的改善，且已蔚為一種趨勢。

尤其對建築類工程，迄 1999 年已有一半以上的州允許使用統包招標，該年聯邦工程已經完全應用該制度，美國國會並已完成立法，給予實施該制度之公務員充分之授權。同時，美國聯邦公共工程管理署也制訂了一套統包工程契約範本以供相關單位參考應用。據美國統包工程協會 DBIA 之統計估計，2001 年統包工程在美國市場的比率將達 30%，且實施統包後績效良好（據 DBIA 之統計，單位成本下降 6.1%，建造時程快 12%，發包時程快 33.5%）。

除了專業服務公司外，大部分州均規定一般公司如其既符合工程技術服務公司之設立要求且符合營造商之設立要求，該公司便可同時從事包含設計及施工之統包服務。

七、觀摩實習參訪心得

7.1 國家工程及測量考試委員會(NCEES)

NCEES 總部位於南卡羅萊納州之克萊蒙森城，克萊蒙森是一個小城市，人口不多，當地有著名之克萊蒙森大學，到 NCEES 參訪時主要的接待人為 NCEES 之專業工程師暨測量師考試發展處處長 John Q. Adams，Adams 處長詳細介紹了 NCEES 之發展沿革及相關業務，特別是辦理專業工程師考試之部分，其說明辦理考試方式係由 NCEES 徵集自願參加出題之有執照之專業工程師擔任命題委員，不管是基本工程知識考試或各科別之工程理論與實踐考試均有各自之考試命題委員會（委員人數因科別而異，有的科別尚設有次委員會，如土木工程科），各科考試命題委員每年開會二次以上，由 NCEES 出車馬費給委員到 NCEES 總部參加出題會議，所出之題目則由二位專業工程師於出題會議中事先考過，合用之題目則放入題庫，每次考試均於二年前開始作業，由命題委員選題、審核、修改確定無誤後才列印出來送至各註冊委員會，NCEES 之考試發展處的職員則負責協調有關事宜，另外命題委員會還聘有考試顧問、統計專家等，提供命題委員專業意見。

因為美國之大學教授、政府職員只要符合領執照之資格都可取得專業工程師執照，所以命題委員中之專業工程師當然有大學教授、政府職員，但實際上在私人企業執業之專業工程師卻占命題委員之大部分，Adams 處長特別解釋因為很多美國執業專業工程師認為參加 NCEES 出題是一種榮譽且是對專業貢獻的一種方式，因此每年參加自願出題之專業工程師均很多，有的人甚至每年都參加，當然 NCESS 亦會作適當篩選人選。此點與我國技師考試均由大學教授所出題之方式頗為不同，Adams 處長認為憑業界專業工程師之實務經驗，題目更可反應將來執業所會碰到之實際問題。

NCEES 另一個重要任務便是提供各州註冊委員會一個交流論壇，每雙月會出版「執照資訊交流」(Licensure Exchange) 刊物，每年會召開一次全國大會及各分區代表大會，邀集各州註冊委員會共同參與研討，交流意見

並修改 NCEES 之政策（Policy）及模範法（Model Law）以供各州註冊委員會參考。

7.2 工程及技術教育認證委員會(ABET)

ABET 位於馬里蘭州最大都市巴爾的摩市中心，是美國工程教育認證之權威單位，接待人是執行長 George D. Peterson 及該委員會下所設之國際工程學位評估處（Engineering Credentials Evaluation International, ECEI）處長 Muriel M. Zhou 及 ABET 相關職員。

Peterson 執行長說明 ABET 各認證委員會成員除學校教授外，亦包含許多學會代表、業界代表、專業工程師代表，雖然工程教育認證不屬強制性，但美國各著名大學之大部分工程學程皆有皆有申請認證，一般大眾及學子均極相信認證結果之參考性與公信力，通過認證之學程全部被各州註冊委員會接受。通常認證之過程包括學校提出申請、ABET 指派認證委員組成小組、校方提出自評報告、ABET 認證委員與院長或系主任訪談、訪查學校學生及校方設備，接著 ABET 會完成評估初稿，給校方一段期間補充說明及答覆，如補充或修正獲接受，便可完成認證，一般從學校提出申請到完成認證時間約需將近二年，由此可見其審核之嚴謹程度。此外，認證結果並非永久有效，每六年還須再評估該認證學程是否符合認證標準。有關認證標準部分，ABET 亦不斷檢討是否符合時代趨勢，於 2000 年提出最新認證標準「Engineering Criteria 2000」，對於一個經 ABET 認證畢業學生所應具備之能力，有更加具體之描述標準。

ABET 對於工程技術學程之認證不只在美國國內著有聲譽，對於推廣國際間工程教育之交流及相互承認，更是獲得許多國家的認同，1979 年加拿大工程教育驗證委員會(CEAB)將其認證標準調整與 ABET 的基本認定標準同步，修畢其認定學程的學生，即與 ABET 的資格具有實質同等性，1980 年代，英國、澳洲、紐西蘭和愛爾蘭等各國的工程教育驗證單位希望同樣具有 ABET 認證同等性，ABET 便於 1989 年在美國的華盛頓首府(Washington D.C)召開加盟會議，承認各參與國的工程教育機構所認證之教育資格與 ABET 的教育

認證資格具有同樣水準，此相互認許協議便稱作華盛頓協議(Washington Accord)，此協議原則六年作一次更新。其後香港於 1995 年獲同意加入，南非於 1999 年獲同意加入，目前華盛頓協議的正式會員國包括美國、澳洲、加拿大、英國、愛爾蘭、紐西蘭、香港、南非等八國，日本最近已申請加入，目前尚屬觀察會員國。

ABET 對於未參加華盛頓協議的國家，也有提出一所謂工程教育學程「實質同等性評估」計畫，如某國其某大學之工程教育學程希望經 ABET 評估，亦可向 ABET 申請，參加「實質同等性評估」的國家可能尚無教育認證單位，目前有哥倫比亞、冰島、韓國、科威特、墨西哥、荷蘭、沙烏地阿拉伯、土耳其、阿拉伯聯合大公國、新加坡等國，其某些工程學程被 ABET 評估為具有與 ABET 認證之同等性。

如尚未建立 ABET 認證制度的國家想要建立認證制度，ABET 也極願意協助，並會與該國建立瞭解備忘錄 (Memoranda of Understanding, MOU)，我拜訪 ABET 的時間是八月二十一日，Peterson 執行長表示其已應我國中國工程師學會之邀請，於九月十一日到台灣說明 ABET 制度，其後據瞭解該說明會辦的非常成功，ABET 也考慮與我國簽署備忘錄，未來可望將 ABET 制度引進國內，使國內工程教育與國際接軌。

7.3 馬里蘭州註冊委員會

馬里蘭州註冊委員會隸屬於該州勞工及執照管理部，委員會共有七位委員，土木背景的專業工程師有二位、電機背景的專業工程師一位、機械背景的專業工程師一位、化學工程背景的專業工程師一位、公眾代表有一位、法律專家一位，主席主席 Melvin Hotz 是電機背景的專業工程師。委員會大會每月開會一次，會場對外開放，任何人都可以參加旁聽，通常位於該州的專業工程師全國聯合公會（NSPE）馬里蘭分會（MSPE）都會派員旁聽，透過執行主任 Sally A. Wingo 小姐之安排，我得以參加八月份之註冊委員大會會議，實地瞭解註冊委員會大會之開會過程，會中得有機會與各位委員交換彼此經驗。開完會後，每位委員都還要抱著一大疊專業工程

師考試申請者的資料逐筆審查其學經歷資格，委員間彼此會交互查核審核結果，如有資格疑義者，則會提委員會所設之資格認定小組討論。委員會下另設有一稱為抱怨委員會（Complaint Committe）之次委員會，也是由委員組成，抱怨委員會專門負責處理民眾對專業工程師提出違反法令之檢舉，並提出懲戒之建議供委員會大會裁示。

馬里蘭州中專業工程師共有二萬餘人，欲維持執照之有效每年都需繳執照更新費，不過換照不需附持續專業發展（CPC）之證明，更新後會收到載有效期之執照（該執照大小可置入皮包內），執照之更新申請係透過網路，每位專業工程師都有自己的密碼，每年只要到州註冊委員會網站登錄並選擇繳費方式即可。電子化網路化是時代的趨勢，此方面本會目前亦正辦理「技師及技術顧問機構管理資訊系統」建置工作，不久技師相關申請案亦可線上申請，我覺得本會正建置中的系統功能比馬里蘭州註冊委員會網站不遑多讓，甚至功能更齊全，頗值得驕傲。

7.4 馬里蘭州工程單位參觀及業者訪談

在馬里蘭州政府拜訪期間，藉著商業經濟發展局國際貿易辦公室 Mary Ann Wo 小姐大力幫忙安排行程，除了馬里蘭州註冊委員會外，還拜訪交通部大眾運輸管理局、環境部之證照及資源管理局及訪問二家美國著名大型工程顧問公司 Parsons Corporation 與 Moffatt & Nichol Engineers firm。

交通部大眾運輸管理局之 Mahesh J. Shama 主任及 Kishor H. Gheewala 先生主要介紹大眾運輸管理局相關之工程作業，如規劃設計之招標工作、工程發包、履約管理等。規劃設計案一般會分二階段審查，第一階段先請對該案有興趣之廠商提出「興趣表示（Expression of Ieterest）」，由該局先針對廠商之經驗、能力等提出評估並篩選出「短名單（Short List）」，一般僅有一半以內廠商進入短名單，第二階段再由短名單內之廠商提出「技術服務建議書（Technical Proposal）」由該局召集專家評選出優勝廠商與之議價簽約，在工程發包方面，該州規定需採最低標競標（Lowest Responsible Bid）得標之方式，不過 Shama 主任表示雖採最低標得標，廠商卻很少低價搶標，

一般決標價尚稱合理，也許這與美國人實事求是的民族性有關吧！另外，Shama 主任表示馬里蘭州公共工程統包案並不多。其實將馬里蘭州的工程採購制度（其他州或聯邦採購不算）與我國比較起來，我認為我國政府採購法相關規定更詳盡且更有彈性。參訪期間適逢巴爾迪摩市全市輕軌電車軌道改建及相關場站改建，Shama 主任及 Gheewala 先生帶我到輕軌電車之工地實地參觀建設，此案非常龐大，跨越各種地形及生態保護區，但是各工地之管理、清潔與安全設施均極完善，令我印象深刻。

環境部證照及資源管理局 Stanley Tsai 主任則介紹該州有關環境資源之管理分工及有關證照之申請作業規定，並帶我參觀該州最大之垃圾掩埋場擴建計畫，該垃圾掩埋場分為好幾期，前期之掩埋場都已完成表面綠化美化工作，對於沼氣設有嚴密監測，還可利用沼氣發電，由於對垃圾掩埋場管理完善，該場周圍甚至住有一些居民，而該場與居民之互動及回饋情形均極良好。馬里蘭州有許多稱為「溼地 (Wet Land)」的生態保護區，該部都加以建檔及設監測站，欲穿越溼地之工程須經過環境部嚴密的審查程序方能取得施工許可 (Construction Permit)。

Parsons Corporation 是美國排名前十大的工程顧問公司，其總公司位於加州，旗下分為科技、運輸、能源、化工、通訊等事業群，我拜訪的是該公司位於馬里蘭州之分公司，與該分公司之 Chirantan Mukhopadhyay 副理及專案經理 Gary Chetelat 先生就美國與我國工程顧問公司之異同交換意見，有關公司負責人是否應為專業工程師乙節，Chirantan Mukhopadhyay 副理表示，以 Parsons Corporation 總公司為例，總裁 James F. Mcnulty 是學物理及管理的，並非專業工程師，且絕大部分董事都是學管理的，但 Parsons Corporation 的服務品質卻是有目共睹，且由於公司高層有許多經營管理之專家，公司業務才能蒸蒸日上，因此雖然 Parsons Corporation 事業群有甚多員工具有專業工程師資格，但專業人員負責技術層面，公司則由具經營長才者經營，此一觀念普遍為一般工程顧問公司接受，另外於拜訪 Moffatt & Nichol Engineers firm 時，該公司的經理 Philip Lee 本身雖為專業工程師，亦表示相同看法。

八、結論與建議

（一）教育認證之必要性

美國工程高等教育認證制度做的非常成功，雖認證單位 ABET 為非政府機關之民間機構，且 ABET 只對自願接受認證之大專工程教育學程進行評估認證，但認證結果對一般大眾及學子均極具參考性與公信力，各州之專業工程師註冊委員會都充分相信該認證學程之教育品質，許多國家亦都參考美國之認證制度甚至將整套制度引進該國，ABET 制度已成為國際上最廣為接受之工程高等教育認證制度，目前我國的技師欲到國外執業或工作，所遇到的第一關困難便是外國不承認我國的工程教育學位，ABET 所推動各國相互承認工程認證教育資格之華盛頓協議及參與「實質同等性評估」之國家涵蓋世界五大洲，且一直陸續增加中，為提升工程教育品質，與國際接軌，我國引進並建立符合 ABET 認證制度之標準實有迫切需要，建議未來參加技師考試要求之教育資格亦可將考生學位是否有獲得認證列為考量因素。

（二）考試制度之改革

目前我國的技師考試是只要該科或相關科系大專院校畢業即可考試，出題委員都為大學教授，所出之考試題目亦多與學校所教的理論課程相關，如此便造成一個現象，剛畢業的學生較容易考取技師資格，畢業後沒有馬上參加技師考試的工程師，縱使其有極豐富的工程經驗，卻很難考上。而我國「公共工程專業技師簽證規則」在九十一年十月施行後，雖技師簽證制度已逐漸落實，但是有簽證資格的技師卻可能很多是缺乏經驗之年輕工程師，簽證品質恐怕有待提升。美國專業工程師考試採取理論與實務並重之二階段考試之方式，非常值得參考，建議我國可比照將工作經驗之要求期間拉長，並落實「實習制度」以提升技師執業能力，因我國之體制係考試權與行政權分立，技師之考選需符合考試院所定「專門職業及技術人員考試法」規定，該法規定專門職業及技術人員考試可以分階段考試，未

來應可考量在符合「專門職業及技術人員考試法」相關規定之前提下，修改本會主管之技師法，加入有關技師考試規定之條文，並請考試院於「專門職業及技術人員技師考試規則」配合修改相關規定，建議將來具有我國教育認證學位之考生於第一階段考試及格取得「實習技師」之資格，並在執業技師指導下累積該科三至四年（碩士以上三年，學士四年）實務工作經驗後方得參加第二階段考試取得技師資格。此外，命題委員建議參考美國，大部份以具有實務經驗之執業技師為主，並考量命題方式是否能改為較客觀之選擇題型式，題目數量可以增多，甚至允許採 open-book 之方式，如不採 open-book 方式，亦可以發參考手冊之方式供考生於考試時查閱參考相關公式。

（三）執業管理制度之改革

美國對於專業工程師之管理，是採取「專業工程師管理專業工程師」之方式，法令之制定、修改與執行都由大部分為執業專業工程師所組成之各州註冊委員會所辦理，各州註冊委員會雖隸屬於州政府，實質上之運作卻類似具有公權力之「半官方」機構，我國專門職業人員之管理體制雖與美國不同，全部由政府主導，但似可以參考其部分精神，例如現階段我國「技師懲戒委員會」之委員可先納入一些執業技師參與決策，未來對於技師學經歷資格之審核甚至執業執照之核發，似乎也可朝整合目前各技師公會成一聯合委員會（Board）或成立單一技師公會，授權該委員會或該公會來辦理，藉由政府適當的控管機制，讓民間專業團體減輕政府之行政負擔。

對於「專業工程師」之稱謂，美國各州州法均有明文保護，專業工程師之社會地位並藉此特殊保護得以提升，我國現行技師法並無特別保護「技師」此一稱謂，且社會上亦有許多其他基層技術人員也在使用「技師」稱謂，例如汽車修理技工亦稱為技師，未來是否要在「技師」前加上「專業」二字稱為「專業技師」，或將「技師」直接改為「專業工程師」以符合國際上一般之稱呼，並在法中明文保障稱謂，似值得思考。

美國工程界極重視倫理議題，教育出全方位的學生，不僅必需擁有專業技術外，更重要的是培養健全的人格、守法及遵循工程倫理，使成為具

備職業道德的工程技術人才，工程會九十年曾委託「技師倫理規範之研究」草擬相關條文，未來技師法修法時，似可將倫理規範法源依據納入，或將重要條文直接列於技師法中，使其具有法律約束力，提升技師之專業倫理。

美國大部分州專業工程師考試時分科，執業時不分科而憑其能力範圍及倫理從事業務，而我國將技師執業科別分列並明定各科執業範圍的方式，其實也有管理上的優點，似無必要完全比照美國，不過我國目前技師執業分工太細，某些科別性質類似之技師針對彼此間執業範圍解釋不同，確實引發許多爭議，將來宜朝簡化分科方向改進。另外，美國加州將結構專業工程師、大地專業工程師規定為具一定結構設計或大地工程經驗之土木專業工程師，並另外加以考核始可取得資格之「進階土木專業工程師」，亦為我國未來改進技師專業分科方式時值得參考之方向。

（四）輔導專業技師進軍國際執業

我國已是世界貿易組織 WTO 會員國之一，目前 WTO 極為重視專業服務自由化及國際化之發展，各會員國間均開始簽署專業資格相互認許協定，許多國家對於專業工程師國際間之移動均展現高度興趣，陸續開始建立統一標準之認證平台。美國專業工程師界為爭取跨國執業機會，已成立美國國際執業工程師委員會（USCIEP）作為該國專業工程師跨國執業機會的窗口，且 USCIEP 所建立之資格規範亦符合世界上多數國際組織之要求，我國政府亦應輔導民間組織建立一類似 USCIEP 之窗口，積極參與相關國際活動。目前國內工程產、官、學界已選定將積極參與 APEC 人力資源發展小組下所附設之亞太工程師專案計畫（APEC Engineer Project），亞太工程師專案計畫亦要求各參與國要設立類似 USCIEP 之單位，稱為監督委員會，九十二年工程會已著手輔導推動籌備成立我國之 APEC 工程師監督委員會，相信不久的將來我國也能有符合國際認證組織的單位運作工程師認許制度，跟上國際化的腳步。

（五）工程技術服務公司之管理

美國大部分州規定可提供工程技術服務之公司（firm）有四種：專業服

務公司、一般股份有限公司、合夥事業、有限公司，除專業服務公司之公司負責人、董事、股東及高級職員全都需為專業工程師、測量師或建築師外，其他型態之公司並無規定負責人必需為專業工程師，只要公司指派專業工程師擔任管理代表，且公司提供之工程技術服務工作由相關專業工程師執行或在其直接監督下執行，專業工程師並須負專業責任及相關法律責任。雖然紐約州、佛蒙特州及華盛頓特區規定提供工程技術服務的公司負責人必需為專業工程師，但是其他各州除部分州對經營者（非負責人）有某些資格限制外，均無限制負責人資格，且據悉許多州已在陸續進行修法放寬經營者資格規定中，而國家工程及測量考試委員會（NCEES）及美國專業工程師全國聯合公會（NSPE）之政策亦皆不贊成如此規定，相信在同儕壓力及潮流下，該三區不久可能就會修改負責人需為專業工程師之規定，因此，只要公司提供之工程技術服務由專業工程師確實負起技術責任，放寬公司負責人可不由專業工程師擔任，是美國對於工程技術服務業產業管理之想法與發展方向。此外，專業工程師可與建築師合組工程技術服務公司，專業設計人員或公司投保專業責任保險之普遍，亦是美國工程技術服務產業之特性。我國目前將「技術顧問機構管理辦法」提升為法律位階之「工程技術顧問公司管理條例」草案，規定在符合一定條件下放寬公司負責人可不由技師擔任、允許建築師與技師合組工程顧問公司、規定工程顧問公司投保專業責任險，可說是非常有前瞻性且與美國趨勢相符，現在「工程技術顧問公司管理條例」正由立法院審議中，期待管理條例能夠早日通過，使工程技術服務產業管理更加健全，並符合國際潮流。

九、謝誌

感謝工程會各級長官厚愛，提供本人此一機會到美國從事本專題之研究，不但在學習上有很大收穫，更大幅拓展視野與見聞。

有關本報告資料之蒐集，特別感謝威斯康辛大學麥迪遜校區土木及環境工程系營建管理組 Jeffery Russell 教授、C. Allen Wortley 教授、博士班候選人黃俊能先生、Philip J. Bradbury 律師，國家工程及測量考試委員會 John Q. Adams 處長，工程及技術教育認證委員會 George D. Peterson 執行長、Muriel M. Zhou 小姐，馬里蘭州政府 Mary Ann Wo 小姐、Mahesh J. Shama 先生、 Kishor H. Gheewala 先生、Stanley Tsai 先生、Richard K. Chen 先生，馬里蘭州專業工程師註冊委員會主席 Melvin Hotz 先生、George C. Szego 先生、執行主任 Sally A. Wingo 小姐，工程顧問公司之 Chirantan Mukhopadhyay 先生、Gary Chetelat 先生、Philip Lee 先生等，由於這些美國友人的聯絡協調，提供寶貴資料及意見，使得我有足夠素材完成本報告，謹此致上最高的謝意。

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十一、附錄

1. 國家工程及測量考試委員會（NCEES）模範法（Model Law）
2. NCEES 專業行為模範準則
3. 美國專業工程師全國聯合公會（NSPE）專業工程師倫理守則
4. NCEES 專業持續發展準則
5. 威斯康辛州專業工程師、建築師、景觀建築師及土地測量師聯合法
6. 加州專業工程師法
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8. 伊利諾州工程技術服務公司登記申請表
9. 美國土木工程師學會（ASCE）第 465 號政策說明
10. 美國國際執業工程師委員會（USCIEP）說明文件
11. 美國工程師契約文件聯合委員會出版之工程技術服務契約範本
12. 馬里蘭州專業工程師相關申請文件書表
13. 馬里蘭州交通部設計圖說
14. 馬里蘭州技術服務評選表

附錄 1

MODEL LAW

REVISED AUGUST 2002

NATIONAL COUNCIL OF EXAMINERS
FOR ENGINEERING AND SURVEYING®

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INTRODUCTION

To be of maximum value, this document should be used as a reference work in the preparation of amendments to existing legislation or in the preparation of new proposed laws. The intent of the NCEES in preparing this document is to present to the states a sound and realistic guide that will provide greater uniformity of qualifications for licensure, to raise these qualifications to a higher level of accomplishment, and to simplify the interstate licensure of engineers and surveyors or land surveyors.

The primary purpose of the NCEES is to serve as an organization through which its Member Boards can counsel and act together to better discharge their duties as individual, autonomous regulatory agencies dedicated to the protection of the public life, health, and property. Standards presented in this publication have been approved by the NCEES Member Boards and represent optimum, realistic levels of qualifications for initial and subsequent licensure to ensure protection of the public's interest.

As revised through August 2002, this guide contains 29 sections designed to assist legislative counsels, legislators, and NCEES members in preparing new or amendatory legislation. To eliminate the redundancy present in previous versions, this document was condensed into a single chapter that covers all specific situations: boards that regulate only engineers, boards that regulate only surveyors, boards that regulate both engineers and surveyors, and independent boards that regulate both engineers and surveyors.

Each line in the various sections has been numbered to facilitate use of this document as a working model.

Should additional information be necessary, please contact:

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LICENSURE OF ENGINEERS AND LAND SURVEYORS

AN ACT

To regulate the practice of engineering and/or[1] surveying or land surveying; provide for the licensure of qualified persons as professional engineers and/or professional surveyors or professional land surveyors and for the certification of engineer interns and/or surveyor interns; define the terms "Engineer," "Professional Engineer," "Professional Engineer, Retired," "Engineer Intern," and "Practice of Engineering"; define the terms "Professional Surveyor or Land Surveyor," "Professional Surveyor or Land Surveyor, Retired," "Surveyor Intern," and "Practice of Surveying or Land Surveying"; create a jurisdiction board of licensure for professional engineers and/or professional surveyors or professional land surveyors and provide for the appointment and compensation of its members; fix the term of members of the board and define its powers and duties; *establish the board as an independent jurisdiction agency which receives no funding from the jurisdiction general fund, relying on revenues from licensure and examination fees and interest to meet its operating and capital costs, and not having its budget, fees, or expenditures subject to review and/or approval by the legislative assembly or emergency board, or any other agency or department, but required to submit a full annual report of its activities and financial affairs to the governor for inclusion in annual financial statements;* set forth the minimum qualifications and other requirements for licensure as a professional engineer, and/or a professional surveyor or professional land surveyor and for certification as an engineer intern or surveyor intern; establish fees and expiration and renewal requirements; impose certain duties upon the jurisdiction and political subdivisions thereof in connection with public work; and provide for the enforcement of this Act and penalties for its violation.

Be it enacted by the General Assembly of the Jurisdiction of ..... as follows.

110 INTRODUCTION

110.10 General Provisions

A. Regulation of Engineers and Surveyors or Land Surveyors–In order to safeguard life, health, and property and to promote the public welfare, the practice of engineering and/or the practice of surveying or land surveying in this jurisdiction is hereby declared to be subject to regulation in the public interest. It shall be unlawful for any person to practice, or to offer to practice, engineering and/or surveying or land surveying in this jurisdiction, as defined in the provisions of this Act, or to use in connection with their name or otherwise assume, or advertise any title or description tending to convey the impression that they are a licensed engineer and/or surveyor or land surveyor, unless such person has been duly licensed or is exempted under the provisions of this Act. The practice of engineering or surveying or land surveying shall be deemed a privilege granted by the

[1] The *Model Law* has been simplified to serve boards of engineers and surveyors, or land surveyors, boards of engineers, boards of surveyors or land surveyors, and independent boards. The reader should substitute the appropriate "and/or" terminology and delete the text that does not apply to the situation. Text shown in italics is language specific to independent boards. Language specific to state government boards is shown in brackets ([ ]).

jurisdiction through the licensure board based on the qualifications of the individual as evidenced by their certificate of licensure, which shall not be transferable.

B. Independent Board

1. *It is the intent of this Act that the board shall be an independent jurisdiction agency. It shall receive no financial support from the jurisdiction general fund, and shall utilize its fees for licensure and renewal and for examinations as its principal source of revenue.*
2. *Any revenues from fines enacted by the board in disciplinary actions shall be deposited in the jurisdiction general fund, and shall not be available to the board.*
3. *All revenues, except fines, received by the board shall be deposited with the jurisdiction treasurer in a separate account for the board separate from the general fund.*
4. *Any such receipts shall constitute a continuous appropriation of such amounts for the purpose of carrying out the functions of the board. All necessary expenses of the board shall be paid from the account by the Treasurer in the same manner as other claims against the jurisdiction are paid, after approval thereof by the chairperson or secretary of the board.*
5. *Monies in the board account may be invested by the treasurer in the same manner as other jurisdiction monies, and any interest earned on monies in the board account shall be credited to that account.*
6. *The board shall adopt a budget only after a public hearing, using the same classifications of expenditures and revenues as tax-supported jurisdiction agencies.*

110.20 Definitions

A. Engineer

1. Engineer – The term "Engineer," within the intent of this Act, shall mean a person who is qualified to practice engineering by reason of special knowledge and use of the mathematical, physical, and engineering sciences and the principles and methods of engineering analysis and design, acquired by engineering education and engineering experience.
2. Professional Engineer – The term "Professional Engineer," as used in this Act, shall mean a person who has been duly licensed as a professional engineer by the board. The board may designate a professional engineer, on the basis of education, experience, and examination, as being licensed in a specific discipline or branch of engineering signifying the area in which the engineer has demonstrated competence.
3. Model Law Engineer – The term "Model Law Engineer" refers to a person who:
   a. Is a graduate of an engineering program accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (EAC/ABET)
   b. Has passed the eight-hour NCEES Fundamentals of Engineering (FE) exam and an eight-hour NCEES Principles and Practice of Engineering (PE) exam using the NCEES cut score
   c. Has completed four years of acceptable engineering experience after confirmation of a bachelor of science degree in an engineering program, which may include up to one year of experience for a graduate engineering degree.
   d. Has a record clear of disciplinary action

4. Professional Engineer, Retired – The term "Professional Engineer, Retired," as used in this Act, shall mean a person who has been duly licensed as a professional engineer by the board and who chooses to relinquish or not to renew a license and who applies to and is approved by the board to be granted the use of the honorific title "Professional Engineer, Retired."
5. Engineer Intern – The term "Engineer Intern," as used in this Act, shall mean a person who has qualified for, taken, and passed an examination in the fundamental engineering subjects, as provided in this Act.
6. Practice of Engineering – The term "Practice of Engineering," within the intent of this Act, shall mean any service or creative work, the adequate performance of which requires engineering education, training, and experience in the application of special knowledge of the mathematical, physical, and engineering sciences to such services or creative work as consultation, investigation, expert technical testimony, evaluation, planning, design and design coordination of engineering works and systems, planning the use of land, air, and water, teaching of advanced engineering subjects, performing engineering surveys and studies, and the review of construction for the purpose of monitoring compliance with drawings and specifications; any of which embraces such services or work, either public or private, in connection with any utilities, structures, buildings, machines, equipment, processes, work systems, projects, communication systems, transportation systems, and industrial or consumer products, or equipment of a control systems, communications, mechanical, electrical, hydraulic, pneumatic, chemical, environmental, or thermal nature, insofar as they involve safeguarding life, health, or property, and including such other professional services as may be necessary to the planning, progress, and completion of any engineering services.

   Design coordination includes the review and coordination of those technical submissions prepared by others, including as appropriate and without limitation, consulting engineers, architects, landscape architects, surveyors or land surveyors, and other professionals working under the direction of the engineer.

   Engineering surveys include all survey activities required to support the sound conception, planning, design, construction, maintenance, and operation of engineered projects, but exclude the surveying of real property for the establishment of land boundaries, rights-of-way, easements, and the dependent or independent surveys or resurveys of the public land survey system.

   A person shall be construed to practice or offer to practice engineering, within the meaning and intent of this Act, who practices any branch of the profession of engineering; or who, by verbal claim, sign, advertisement, letterhead, card, or in any other way represents themselves to be a professional engineer, or through the use of some other title implies that they are a professional engineer or that they are licensed under this Act; or who hold themselves out as able to perform, or who does perform any engineering service or work or any other service designated by the practitioner which is recognized as engineering.
7. Consulting Engineer – The term "Consulting Engineer," as used in this Act, shall mean a professional engineer whose principal occupation is the independent practice of engineering; whose livelihood is obtained by offering engineering services to the public; who is devoid of public, commercial, and product affiliation that might tend to

imply a conflict of interest; and who is cognizant of their public and legal responsibilities, and is capable of discharging them.

8. Inactive Licensee – Licensees who are not engaged in engineering practice which requires licensure in this jurisdiction may be granted inactive status. No inactive licensee may practice in this jurisdiction unless otherwise exempted in this chapter. Inactive licensees are exempt from the continuing education requirements.

B. Professional Surveyor or Land Surveyor

1. Professional Surveyor or Land Surveyor – The term "Professional Surveyor or Land Surveyor," as used in this Act, shall mean a person who has been duly licensed as a professional surveyor or land surveyor by the board established under this Act, and who is a professional specialist in the technique of measuring land, educated in the basic principles of mathematics, the related physical and applied sciences, and the relevant requirements of law for adequate evidence and all requisite to surveying of real property, and engaged in the practice of surveying or land surveying as herein defined.
2. Model Law Surveyor – The term "Model Law Surveyor" refers to a person who meets the minimum requirements of this act and is a graduate of an EAC/ABET-accredited Surveying Engineering Group program, a Surveying and Mapping Group program accredited by the Applied Science Accreditation Commission of ABET (ASAC/ABET), or the equivalent.
3. Professional Surveyor or Land Surveyor, Retired - The term "Professional Surveyor or Land Surveyor, Retired" as used in this Act shall mean a person who has been duly licensed as a professional surveyor or land surveyor by the board and who chooses to relinquish or not to renew a license and who applies to and is approved by the board to be granted the use of the honorific title "Professional Surveyor or Land Surveyor, Retired."
4. Surveyor Intern – The term "Surveyor Intern," as used in this Act, shall mean a person who has qualified for, taken, and has passed an examination in the fundamental surveyor intern subjects, as provided by this Act.
5. Practice of Surveying or Land Surveying – The term "Practice of Surveying or Land Surveying," within the intent of this Act shall mean providing professional services such as consultation, investigation, testimony evaluation, expert technical testimony, planning, mapping, assembling, and interpreting reliable scientific measurements and information relative to the location, size, shape, or physical features of the earth, improvements on the earth, the space above the earth, or any part of the earth, and utilization and development of these facts and interpretation into an orderly survey map, plan, report, description, or project. The practice of surveying or land surveying includes, but is not limited to, any one or more of the following:
   a. Determining the configuration or contour of the earth's surface or the position of fixed objects thereon by measuring lines and angles and applying the principles of mathematics or photogrammetry.
   b. Performing geodetic surveying which includes surveying for determination of the size and shape of the earth utilizing angular and linear measurements through spatially oriented spherical geometry.
   c. Determining, by the use of principles of surveying, the position for any survey control (non-boundary) monument or reference point; or setting, resetting, or replacing any such monument or reference point.

d. Creating, preparing, or modifying electronic or computerized data, including land information systems, and geographic information systems, relative to the performance of the activities in the above described items a. through c.
e. Locating, relocating, establishing, reestablishing, laying out, or retracing any property line or boundary of any tract of land or any road, right of way, easement, alignment, or elevation of any of the fixed works embraced within the practice of engineering.
f. Making any survey for the subdivision of any tract of land.
g. Determining, by the use of principles of land surveying, the position for any survey monument or reference point; or setting, resetting, or replacing any such monument or reference point.
h. Creating, preparing, or modifying electronic or computerized data, including land information systems, and geographic information systems, relative to the performance of the activities in the above described items e. through g.

Any person shall be construed to practice or offer to practice surveying or land surveying, within the meaning and intent of this Act, who engages in surveying or land surveying or who by verbal claim, sign, advertisement, letterhead, card, or in any other way represents themselves to be a professional surveyor or land surveyor or, through the use of some other title implies that they are able to perform, or who does perform any surveying or land surveying service or work or any other service designated by the practitioner which is recognized as surveying or land surveying.

6. Inactive Licensee – Licensees who are not engaged in surveying or land surveying practice which requires licensure in this jurisdiction may be granted inactive status. No inactive licensee may practice in this jurisdiction unless otherwise exempted in this chapter. Inactive licensees are exempt from the continuing education requirements.

C. Board - The term "Board," as used in this Act, shall mean the jurisdiction board of licensure for professional engineers and professional surveyors or professional land surveyors, hereinafter provided by this Act.

D. Jurisdiction – A state, the District of Columbia, any territory, commonwealth, or possession of the United States that issues licenses to practice and regulates the practice of engineering and/or land surveying within its legal boundaries.

E. Responsible Charge – The term "Responsible Charge," as used in this Act, shall mean direct control and personal supervision of engineering work or surveying or land surveying as the case may be.

F. Rules of Professional Responsibility for Professional Engineers and Professional Surveyors or Land Surveyors – The term "Rules of Professional Responsibility for Professional Engineers and Professional Surveyors or Land Surveyors," as used in this Act, shall mean those rules, if any, promulgated by the board as authorized by this Act.

G. Firm – The term "Firm," as used in this Act, shall mean any form of business entity other than an individual licensee operating under his or her name that offers professional engineering or surveying or land surveying services to the public of their licensed personnel.

H. Managing Agent – The term "Managing Agent," as used in this Act, shall mean a natural person who is licensed under this Act and who has been designated pursuant to Section 150.40 of this Act by the firm. The managing agent is responsible for the engineering or surveying or land surveying work in this jurisdiction and/or for projects or property within this jurisdiction offered or provided by the firm. A licensee may not be designated as a managing agent for more than one firm. An engineer or surveyor who renders occasional,

part-time or consulting engineering or surveying or land surveying services to, or for, a firm may not be designated as a managing agent. The managing agent's responsibilities include:

1. Renewal of the certificate of authority and notification to the board of any change in managing agent.
2. Overall supervision of the firm's licensed and subordinate personnel providing the engineering or surveying or land surveying work in this jurisdiction.
3. Institution and adherence of policies of the firm that are in accordance with the Rules of Professional Responsibility for Professional Engineers and Professional Surveyors or Land Surveyors, adopted pursuant to Section 150.10 B of this Act.

I. Rules – The Rules are those adopted pursuant to Section 120.60, Board Powers, subsection A, of this Act.

J. Signature – The term "Signature," as used in this Act, shall mean handwritten or digital as follows:

1. A handwritten message identification containing the name of the person who applied it; or
2. A digital signature that is an electronic authentication process attached to or logically associated with an electronic document. The digital signature must be:
   a. Unique to the person using it
   b. Capable of verification
   c. Under the sole control of the person using it
   d. Linked to a document in such a manner that the digital signature is invalidated if any data in the document is changed
3. A digital signature that uses a process approved by the board will be presumed to meet the criteria set forth in Sections 110.20 a. through d. above.

K. Seal – The term "Seal," as used in this Act, shall mean a symbol, image, or list of information that may be found in the form of a rubber stamp, embossed seal, computer-generated data, or other form found acceptable to the board that is applied or attached to the document in a manner consistent with board rules. The seal shall contain the following:

1. Jurisdiction of licensure
2. Licensee's name
3. License/certificate/registration number
4. The words "Professional Engineer" and discipline (if licensed by) or "Professional Surveyor"
5. Any other information required by the board

120 THE LICENSING BOARD

120.10 Board Appointments, Terms

A jurisdiction board of licensure for professional engineers and/or professional surveyors or land surveyors is hereby created whose duty it shall be to administer the provisions of this Act. The board shall consist of ..... professional engineers, ... professional surveyors or land surveyors, and ..... public members who shall be appointed by the governor. The engineer and surveyor or land surveyor members shall preferably be appointed from a list of nominees submitted by the respective engineering and/or surveying or land surveying societies of the jurisdiction and shall have the qualifications required by Section 120.20. Each member of the board shall receive a certificate of their appointment from the governor and shall file with the secretary of the jurisdiction a written oath or affirmation for the faithful discharge of their

official duty. Appointments to the board shall be in such manner and for such period of time that the term of each member shall expire at the end of a different year, insofar as is possible. On the expiration of the term of any member, the governor shall in the manner hereinbefore provided appoint for a term of ..... years a professional engineer, a professional surveyor or land surveyor, or a public member having the qualifications required in Section 120.20. A member may be reappointed to succeed themselves. Each member shall hold office until the expiration of the term for which appointed or until a successor has been duly appointed and has qualified. In the event of a vacancy on the board due to resignation, death or for any cause resulting in an unexpired term, if not filled within three months by the governor, the board may appoint a provisional member to serve in the interim until the governor acts.

120.20 Board Qualifications

Each engineering member of the board shall be a citizen of the United States and a resident of this jurisdiction. They shall have been engaged in the lawful practice of engineering as a professional engineer for at least twelve years, shall have been in responsible charge of engineering projects for at least five years, and shall be a licensed professional engineer in this jurisdiction.

Each surveying or land surveying member of the board shall be a citizen of the United States and a resident of this jurisdiction. They shall have been engaged in the lawful practice of surveying or land surveying as a professional surveyor or land surveyor for at least twelve years, shall have been in responsible charge of surveying or land surveying projects for at least five years, and shall be a licensed professional surveyor or land surveyor in this jurisdiction.

Each public member *shall be a citizen of the United States and a resident of this jurisdiction and* shall not be or have been either an engineer or surveyor or land surveyor. The majority of the board members shall be engineers and/or surveyors or land surveyors.

120.30 Board Compensation, Expenses

Each member of the board shall receive compensation as prescribed in Section 120.60 of this Act when attending to the work of the board or any of its committees and for the time spent in necessary travel; and, in addition thereto, shall be reimbursed for all actual traveling, incidental, and clerical expenses necessarily incurred in carrying out the provisions of this Act.

120.40 Board Removal of Members, Vacancies

The governor may remove any member of the board for misconduct, incompetency, neglect of duty, or for reason prescribed by law for removal of jurisdiction officials. Vacancies in the membership of the board shall be filled for the unexpired term by appointment of the governor as provided in Section 120.10.

120.50 Board Organization and Meetings

The board shall hold at least ..... regular meetings each year. Special meetings may be held as the bylaws or rules of the board provide. The board shall elect or appoint annually the following officers: a chairman, a vice chairman, and a secretary. A quorum of the board shall consist of no fewer than ..... professional engineer members, ... professional surveyor or land surveyor members, and ..... public members.

120.60 Board Powers

A. The board shall have the power to adopt and amend all bylaws and rules of procedure not inconsistent with the constitution and laws of this jurisdiction or this Act, including, but not limited to, the adoption and promulgation of Rules of Professional Responsibility for Professional Engineers and Professional Surveyors or Land Surveyors which may be reasonably necessary for the proper performance of its duties and the regulation of its procedures, meetings, records, examinations, and the conduct thereof. These actions by the board shall be binding upon persons licensed under this Act and on non-licensees found by the board to be in violation of provisions of this Act and shall be applicable to corporations holding a certificate of authorization as provided in Section 160.10 of this Act. The board shall adopt and have an official seal, which shall be affixed to each certificate issued.

B. In carrying into effect the provisions of this Act, the board may subpoena witnesses and compel their attendance, and also may require the submission of books, papers, documents, or other pertinent data, in any disciplinary matter, or in any case wherever a violation of this Act is alleged. Upon failure or refusal to comply with any such order of the board, or upon failure to honor its subpoena, as herein provided, the board may apply to a court of any jurisdiction to enforce compliance with same.

C. The board is hereby authorized in the name of the jurisdiction to apply for relief by injunction in the established manner provided in cases of civil procedure, without bond, to enforce the provisions of this Act, or to restrain any violation thereof. In such proceedings, it shall not be necessary to allege or prove, either that an adequate remedy at law does not exist, or that substantial or irreparable damage would result from the continued violation thereof. The members of the board shall not be personally liable under these proceedings.

D. The board may subject an applicant for licensure to such examinations as it deems necessary to determine their qualifications.

E. The board shall have the power and authority to require a demonstration of continuing professional competency of engineers and surveyors or land surveyors as a condition of renewal or relicensure.

F. The board has the authority for citation and fining of persons engaged in the unlawful practice of engineering or surveying or land surveying who are not licensed in this jurisdiction as provided by law.

G. No action or other legal proceedings for damages shall be instituted against the board or against any board member or employee or agent of the board for any act done in good faith and in the intended performance of any power granted under this Act or for any neglect or default in the performance or exercise in good faith of any such duty or power.

H. The board shall have the power and authority to waive requirements of this law pertaining to surveying or engineering licensure provided consideration is given to safeguarding life, health, and property, and promoting the public welfare.

I. In carrying out the duties, functions, and powers of the board, the board may contract with any jurisdiction agency for the performance of such duties, functions, and powers as the board considers appropriate. A jurisdiction agency may not charge the board for such services an amount that is greater than the actual cost of the services. Except as otherwise specifically provided in this Act, the board may contract with private entities for such duties, functions, and powers as the board considers appropriate.

J. The board may sue and be sued in its own name.

K. The board may, notwithstanding any other statute to the contrary, enter into contracts and acquire, own, encumber, issue, replace, deal in, and dispose of real and personal property.

L. The board may fix a per diem amount to be paid to board members for each day or portion thereof during which the member is actually engaged in the performance of official duties. Board members may also receive actual and necessary travel or other expenses incurred in the performance of their duties. If an advisory council or peer review committee is established by the board to assist it in carrying out its duties, functions, and powers, the board may also pay per diem amounts and actual expenses for members thereof.

M. The board may establish and collect fees not to exceed amounts necessary for the purpose of carrying out its functions. Such fees shall cover engineering licensure, engineer intern certification, surveyor or land surveyor licensure, surveyor intern certification, and renewals and examinations. It may establish and collect separate fees for examination than those for licensure and/or certification as the board considers appropriate.

120.70 Receipts and Disbursements

The secretary of the board shall receive and account for all monies derived under the provisions of this Act. [This fund shall be known as the "Professional Engineers' and Professional Surveyors or Land Surveyors' Fund" and shall be kept in a local bank or deposited with the jurisdiction treasurer, and shall be paid out only upon requisitions submitted by the secretary. All monies in this fund are hereby specifically appropriated for the use of the board.] *Such monies shall be deposited with the jurisdiction treasurer and kept in a separate account from the jurisdiction general fund, which shall be known as the "Professional Engineers' and/or Professional Surveyors or Land Surveyors' Account," and shall be paid out only upon requisitions submitted by the secretary or board chairperson. All monies in this account including interest are hereby specifically appropriated for the use of the board.* [The secretary] shall give a surety bond to the jurisdiction in such sum as may be required by the laws of this jurisdiction. The premium on said bond shall be regarded as a proper and necessary expense of the board. The secretary shall receive such salary as the board shall determine. The board shall employ such clerical or other assistants as are necessary for the proper performance of its work, and shall make expenditures from the abovementioned fund for any purpose which, in the opinion of the board, is reasonably necessary for the proper performance of its duties under this Act, including the expenses of the board's delegates to meetings of and membership fees to the National Council of Examiners for Engineering and Surveying and any of its subdivisions. Under no circumstances shall the total amount of warrants issued in payment of the expenses and compensation provided for in this Act exceed the amount of monies collected.

120.80 Records and Reports

A. The board shall keep a record of its proceedings and of all applications for licensure, which record shall show (1) the name, age, and last known address of each applicant, (2) the date of application, (3) the place of business of such applicant, (4) education, experience, and other qualifications, (5) type of examination required, (6) whether or not the applicant was rejected, (7) whether or not a certificate of licensure was granted, (8) the date of the action by the board, and (9) such other information as may be deemed necessary by the board.

B. The record of the board shall be prima facie evidence of the proceedings of the board, and a transcript thereof, duly certified by the secretary under seal, shall be admissible as evidence with the same force and effect as if the original were produced.

C. Annually, as of the end of the fiscal year, the board shall submit to the governor a report of its transactions of the preceding year and shall transmit to the governor a complete statement of the receipts and expenditures of the board, attested by affidavits of its chairman and secretary.

D. Board records and papers of the following class are of a confidential nature and are not public records: examination material for examinations not yet given, file records of examination problem solutions, letters of inquiry and reference concerning applicants, board inquiry forms concerning applicants, investigation files where any investigation is still pending, and all other materials of like confidential nature.

120.90 Roster

A complete roster showing the names and last known addresses of all licensed professional engineers and of all licensed professional surveyors or land surveyors shall be published by the secretary of the board once each year, or at intervals as established by board regulation.

130 CANDIDATES FOR LICENSURE

130.10 General Requirements for Licensure

Education, experience, and examinations (as described in *Model Rules and Regulations for Licensing Boards)* are required for licensure as a professional engineer or professional land surveyor.

A. As an Engineer Intern – The following shall be considered as minimum evidence that the applicant is qualified for certification as an engineer intern. A college senior or graduate of an engineering program of four years or more accredited by EAC/ABET, or the equivalent, shall be admitted to an eight-hour written examination in the fundamentals of engineering. Upon passing such examination, the applicant shall be certified or enrolled as an engineer intern, if otherwise qualified.

B. As a Surveyor Intern – The following shall be considered as minimum evidence to the board that the applicant is qualified for certification as a surveyor intern.

1. A college senior or graduate of an EAC/ABET or ASAC/ABET surveying program of four years or more shall be admitted to an eight-hour written examination in the fundamentals of surveying. Upon passing such examination, the applicant shall be certified or enrolled as a surveyor intern, if the applicant is otherwise qualified.
2. A graduate of a program related to surveying of four years or more as approved by the board and with a specific record of two years of progressive experience in surveying or land surveying shall be admitted to an eight-hour written examination in the fundamentals of surveying or land surveying. Upon passing such examination, the applicant shall be certified or enrolled as a surveyor intern, if the applicant is otherwise qualified.
3. A graduate of a four-year or more program as acceptable to the board and with a specific record of four years of progressive experience in surveying or land surveying shall be admitted to an eight-hour written examination in the fundamentals of surveying or land surveying. Upon passing such examination, the applicant shall be certified or enrolled as a surveyor intern, if the applicant is otherwise qualified.

C. Professional Engineer or Professional Surveyor or Land Surveyor – To be eligible for admission to the examination for professional engineer or professional surveyor or land surveyor, an applicant must be of good character and reputation and shall submit five references with his or her application for licensure, three of which references shall be professional engineers or professional surveyors or land surveyors having personal knowledge of the applicant's engineering or surveying experience.

1. As a Professional Engineer – The following shall be considered as minimum evidence satisfactory to the board that the applicant is qualified for licensure as a professional engineer.
   a. Licensure by Comity – A person holding a certificate of licensure to engage in the practice of engineering, issued by a proper authority of a jurisdiction or possession of the United States, the District of Columbia, or any foreign country, based on requirements that do not conflict with the provisions of this Act and possessing credentials that are, in the judgment of the board, of a standard not lower than that specified in the applicable licensure act in effect in this jurisdiction at the time such certificate was issued may, upon application, be licensed without further examination except as required to present evidence of knowledge of statutes, rules, and design requirements unique to this jurisdiction.

      A person holding an active Council Record with the National Council of Examiners for Engineering and Surveying, whose qualifications as evidenced by the Council Record, meet the requirements of this Act, in the judgment of the board, may, upon application, be licensed without further examination except as required to examine the applicant's knowledge of statutes, rules, and design requirements unique to this jurisdiction.
   b. An engineer intern with a specific record of an additional four years or more of progressive experience on engineering projects of a grade and a character which indicates to the board that the applicant may be competent to practice engineering shall be admitted to an eight-hour written examination in the principles and practice of engineering. Upon passing such examinations, the applicant shall be granted a certificate of licensure to practice engineering in this jurisdiction, provided the applicant is otherwise qualified.

1. As a Professional Engineer (Alternative Section)
   Jurisdictions that do not license by discipline – An engineer licensed in another jurisdiction in a specific engineering discipline may be licensed by this board as a professional engineer.

   Jurisdictions that license by discipline – An engineer licensed as a professional engineer in another jurisdiction may be licensed by this board in any discipline in which the engineer can verify his or her competency.
2. As a Professional Surveyor or Land Surveyor – The evaluation of a professional surveyor or land surveyor applicant's qualifications involves consideration of education, technical, and surveying or land surveying experience, exhibits of surveying or land surveying projects with which the applicant has been associated, recommendations by references and a review of these categories during an examination. The surveyor intern applicant's qualifications may be reviewed at an interview if the board deems it necessary. The following shall be considered as

minimum evidence to the board that the applicant is qualified for licensure as a professional surveyor or land surveyor.

a. Licensure by Comity – A person holding a certificate of licensure to engage in the practice of surveying or land surveying issued by a proper authority of a jurisdiction or possession of the United States, the District of Columbia, or any foreign country, based on requirements that do not conflict with the provisions of this Act and possessing the credentials that are, in the judgment of the board, not lower than that specified in the applicable licensure act in effect in this jurisdiction at the time such certificate was issued may, upon application, be licensed without further examination except as required to present evidence of knowledge of statutes, rules, and surveying requirements unique to this jurisdiction.

   A person holding an active Council Record with the National Council of Examiners for Engineering and Surveying, whose qualifications as evidenced by the Council Record, meet the requirements of this Act, in the judgment of the board, may, upon application, be licensed without further examination except as required to examine the applicant's knowledge of statutes, rules, and surveying requirements unique to this jurisdiction.

b. A surveyor intern with a specific record of an additional four years of combined office and field experience satisfactory to the board in surveying or land surveying, of which a minimum of three years' progressive experience has been on surveying or land surveying projects under the supervision of a professional surveyor or land surveyor, shall be admitted to an eight-hour written examination in the principles and practice of surveying or land surveying. Upon passing such examination, the applicant shall be granted a certificate of licensure to practice surveying or land surveying in this jurisdiction, provided the applicant is otherwise qualified.

130.20 Application and Licensure Fees

A. Application for licensure as a professional engineer and/or professional surveyor or land surveyor or certification as an engineer intern or surveyor intern shall be on a form prescribed and furnished by the board; shall contain statements made under oath, showing the applicant's education and a detailed summary of technical and engineering experience or surveying or land surveying experience; and shall include the names and complete mailing addresses of the references, none of whom should be members of the board, as set forth in Section 130.10.

   The board may accept the verified information contained in a valid Council Record issued by the National Council of Examiners for Engineering and Surveying for applicants in lieu of the same information that is required on the form prescribed and furnished by the board.

B. The licensure fee shall be established by regulation of the board for licensure as a professional engineer or a professional surveyor or land surveyor, for certification as an engineer intern or surveyor intern and shall accompany the applications.

C. The certification fee for corporations shall be established by regulation of the board and shall accompany the application.

D. Should the board deny the issuance of a certificate to any applicant, including the application of a corporation for a certificate of authorization, the fee paid shall be retained as an application fee.

130.30 Examinations

A. The examinations will be held at such times and places as the board directs. The board shall determine the acceptable passing grade on examinations. The board may require a take-home, pre-application questionnaire based on this jurisdiction's rules and regulations as they apply to professionalism and ethics.

B. Written examinations will be given in two sections and may be taken only after the applicant has met the other minimum requirements as given in Section 130.10, and has been approved by the board for admission to the examinations as follows:

1. Fundamentals of Engineering – The examination consists of an eight-hour test period on the fundamentals of engineering. Passing this examination qualifies the examinee for an engineer intern certificate, provided the examinee has met all other requirements for certification required by this Act.
2. Principles and Practice of Engineering – The examination consists of an eight-hour test period on applied engineering. Passing this examination qualifies the examinee for licensure as a professional engineer, provided the examinee has met the other requirements for licensure required by this Act.
3. Fundamentals of Surveying – The examination consists of an eight-hour test period on the basic disciplines of surveying. Passing this examination qualifies the examinee for a surveyor intern certification, provided the examinee has met all other requirements for certification required by this Act.
4. Principles and Practice of Surveying or Land Surveying – The examination consists of an eight-hour test period on the applied disciplines of surveying or land surveying, divided in separate parts as determined by the board. Passing these parts qualifies the examinee for licensure as a professional surveyor or land surveyor, provided the examinee has met the other requirements for licensure required by this Act.

C. A candidate failing one examination may apply for re-examination, which may be granted upon payment of a fee established by regulation of the board. Before readmission to the examination, in the event of a second failure, the examinee may, at the discretion of the board, be required to appear before the board with evidence of having acquired the necessary additional knowledge to qualify.

D. The board may prepare and adopt specifications for the written examinations in engineering and surveying or land surveying. They shall be published in brochure form and be available to any person interested in being licensed as a professional engineer or as a professional surveyor or land surveyor. The board may elect to waive any additional written examination requirements for the performance of the activities described in Section 110.20 B.5.a. through d. to facilitate mobility between jurisdictions.

140 LICENSEES

140.10 Certificates, Seals

A. The board shall issue to any applicant who, in the opinion of the board, has met the requirements of this Act, a certificate of licensure giving the licensee proper authority to practice their profession in this jurisdiction. The certificate of licensure for a professional engineer shall carry the designation "Professional Engineer" and for a professional surveyor or land surveyor, "Professional Surveyor" or "Professional Land Surveyor." It shall give the full name of the licensee with licensure number and shall be signed by the chairman and the secretary under the seal of the board.

B. This certificate shall be prima facie evidence that the person named thereon is entitled to all rights, privileges, and responsibilities of a professional engineer or a professional

surveyor or land surveyor while the said certificate of licensure remains unrevoked and unexpired.

C. Each licensee hereunder must, upon licensure, obtain a seal, the use and design of which is described in Section 110.20. It shall be unlawful for a licensee to affix or to permit their seal and signature to be affixed to any document described here below after the expiration or revocation of a license or for the purpose of aiding or abetting any other person to evade or attempt to evade any provisions of this Act. Whenever the seal is applied, the document must be signed by the licensee thereby certifying that he or she is competent in the subject matter and was in responsible charge of the work product. If a handwritten signature is used, it shall be adjacent to or across the seal. A digital signature may be used in lieu of a handwritten signature.

1. The seal, signature, and date shall be placed on all final specifications, land surveys, reports, plats, drawings, plans, design information, and calculations whenever presented to a client or any public or governmental agency. Failure to sign and seal any final work product constitutes a violation of this Act and shall be handled as a disciplinary action under this Act.
2. Drawings, reports, or documents, which require sealing, dating, and signing may also be transmitted electronically. The board shall, by rule, establish procedures for this process.
3. The seal, signature, and date shall be placed on all original documents in such a manner that the seal, signature, and date will be clearly visible on any copy. The application of the licensee's seal and signature shall constitute certification that the work thereon was done by the licensee or under the responsible charge of the licensee. In the case of multiple sealings, the first or title page of drawings shall be sealed, signed, and dated by all involved. In addition, each sheet shall be sealed, signed, and dated by the licensee or licensees responsible for each sheet. In the case of reports or specifications, the cover sheet shall be signed, sealed, and dated. In the case of an authorized firm, under Section 150.40 of this Act, each sheet shall be sealed, signed, and dated by the licensee or licensees involved. The principal in responsible charge shall sign, seal, and date the title or first sheet.
4. No licensee shall affix his seal or signature to sketches, working drawing, specifications, or other documents developed by others not under his direct personal supervision and not subject to the authority of that licensee. The licensee shall sign and seal only work within the licensee's area(s) of competence. Failure to comply with this provision shall be a violation of this Act and could result in disciplinary action.
5. Plans, plats, specifications, drawings, reports, or other documents will be deemed to have been prepared under the responsible charge of a licensee only when all the following conditions have been met and documented:
   a. The client requesting preparation of such plans, plats, specifications, drawings, reports, or other documents makes the request directly to the licensee, or a member or employee of the licensee's firm;
   b. The licensee supervises the preparation of the plans, plats, specifications, drawings, reports, or other documents and has input into their preparation prior to their completion;
   c. The licensee reviews the final plans, plats, specifications, drawings, reports, or other documents; and

d. .The licensee has the authority to, and does, make any necessary and appropriate changes to the final plans, plats, specifications, drawings, reports, or other documents.

6. In circumstances where a licensee in responsible charge of the work is unavailable to complete the work, or the work is a site adaptation of a standard design plan, or the work is a design plan signed and sealed by an out-of-jurisdiction licensee, a successor licensee may take responsible charge by performing all professional services to include developing a complete design file with work or design criteria, calculations, code research, and any necessary and appropriate changes to the work. The non-professional services, such as drafting, need not be redone by the successor licensee but must clearly and accurately reflect the successor licensee's work. The burden is on the successor licensee to show such compliance. The successor licensee shall have control of and responsibility for the work product and the signed and sealed originals of all documents.

D. The board shall issue to any applicant who, in the opinion of the board, has met the requirements of this Act, an enrollment card as engineer intern or surveyor intern, which indicates that their name has been recorded as such in the board office. The engineer intern or surveyor intern enrollment card does not authorize the holder to practice as a professional engineer or a professional surveyor or land surveyor.

140.20 Expirations, Renewals, and Reinstatement to Active Practice

A. Certificates of licensure and certificates of authorization for firms shall expire on the last day of the month of ..... following their issuance and shall become invalid after that date unless renewed. It shall be the duty of the secretary of the board to notify every person licensed under this Act and every firm holding a certificate of authorization under this Act of the date of the expiration of the certificate of licensure or certificate of authorization and the amount of the fee required for its renewal. Such notice shall be mailed to the licensee or firm at their last known address at least one month in advance of the date of the expiration of the certificate.

Renewal may be effected at any time prior to or during the month of ..... by payment of a fee as established by regulation of the board. Renewal of an expired certificate may be effected under rules promulgated by the board regarding requirements for re-examination and penalty fees.

B. If a licensee is granted inactive status, the licensee may return to active status by notifying the board in advance of this intention, by paying appropriate fees, and by meeting all requirements of the board including demonstration of continuing professional competency as a condition of reinstatement.

140.30 Reissuance of Certificates

A new certificate of licensure or certificate of authorization to replace any certificate lost, destroyed, or mutilated may be issued subject to the rules of the board. A charge established by regulation shall be made for each issuance.

140.40 Public Works

Any jurisdiction, county, or local government agencies or authorities, or officials or employees thereof, shall not engage in the practice of engineering or surveying or land surveying involving either public or private property without the project being under the

direct charge and supervision of a professional engineer for engineering projects or a professional surveyor or land surveyor for surveying or land surveying projects, as provided for the practice of the respective professions by this Act.

150 DISCIPLINARY ACTION

150.10 Disciplinary Action Revocation, Suspension, Refusal to Issue, Restore or Renew, Probation, Fine, Reprimand

A. The board shall have the power to suspend, revoke, place on probation, fine and/or reprimand, or to refuse to issue, restore or renew a certificate of licensure, to any professional engineer, professional surveyor, or professional land surveyor who is found guilty of:

1. The practice of any fraud or deceit in obtaining or attempting to obtain or renew a certificate of licensure or certificate of authorization.
2. Any negligence, incompetency or misconduct in the practice of engineering, surveying, or land surveying.
3. Conviction of or entry of a plea of guilty or nolo contendere to any crime which is a felony, whether related to practice or not; and conviction of or entry of a plea of guilty or nolo contendere to any crime, whether a felony, misdemeanor, or otherwise, an essential element of which is dishonesty or which is directly related to the practice of engineering, surveying, or land surveying.
4. Failure to comply with any of the provisions of this Act or any of the rules or regulations pertaining thereto.
5. Discipline by another jurisdiction, territory, the District of Columbia, foreign country, the United States government, or any other governmental agency, if at least one of the grounds for discipline is the same or substantially equivalent to those contained in this section.
6. Failure to provide information requested by the board as a result of a formal or informal complaint to the board which would indicate a violation of this Act.
7. Knowingly making false statements or signing false statements, certifications, or affidavits to induce payment.
8. Aiding or assisting another person in violating any provision of this Act or the rules or regulations pertaining thereto.
9. Violating any terms of probation imposed by the board or using a seal or practicing engineering, surveying, or land surveying while the professional engineer's license, professional surveyor's license, or professional land surveyor's license is suspended, revoked, non-renewed, or inactive.
10. Signing, affixing, or permitting the licensee's seal or signature to be affixed to any specifications, reports, drawings, plans, plats, design information, construction documents or calculations, surveys, or revisions thereof which have not been prepared by the licensee or under the licensee's responsibility or direct personal supervision.
11. Engaging in dishonorable, unethical, or unprofessional conduct of a character likely to deceive, defraud, or harm the public.
12. Providing false testimony or information to the board.
13. Habitual intoxication or addiction to the use of drugs or alcohol.
14. Providing engineering, surveying, or land surveying services outside any of the licensee's areas of competence. Licensees must demonstrate by education or experience that they are competent to practice in their field.

B. In addition to or in lieu of any other penalty provided in this section, any licensee who violates a provision of this Act or any rule or regulation pertaining thereto, a civil penalty in an amount determined by the board of not more than $5,000 for each offense.
   1. Each day of continued violation may constitute a separate offense.
   2. In determining the amount of civil penalty to be assessed pursuant to this section the board may consider such factors as the following:
      a. Whether the amount imposed will be a substantial economic determent to the violation;
      b. The circumstances leading to the violation;
      c. The severity of the violation and the risk of harm to the public.

C. The board shall have prepared and shall adopt rules of professional responsibility for Professional Engineers and Professional Surveyors or Land Surveyors as provided for in Section 120.60, which shall be made known in writing to every licensee and applicant for licensure under this Act, and which shall be published in the roster provided for in Section 120.90. Such publication shall constitute due notice to all licensees. The board may revise and amend these Rules of Professional Responsibility for Professional Engineers and Professional Surveyors or Land Surveyors from time to time and shall forthwith notify each licensee in writing of such revisions or amendments.

D. In addition to any other penalty provided in this section, the board shall have the power to revoke, suspend, place on probation, fine and/or reprimand, or refuse to issue, restore or renew, the certificate of authorization of any firm where one or more of its officers, directors, partners, members, or managers have been found guilty of any conduct which would constitute a violation under the provisions of this section.

E. Before issuing an order under this section, the board shall provide the person written notice and the opportunity to request, within 30 days of issuance of notice by the board, a hearing on the record.

F. In connection with proceeding under Subsections A and B of this section, the board may issue subpoenas to compel the attendance and testimony of witnesses and the disclosure of evidence, and may request the attorney general to bring an action to enforce a subpoena.

150.20 Disciplinary Action Procedures

A. Any person may prefer charges of fraud, deceit, gross negligence, incompetence, negligence, misconduct, or violation of the Rules of Professional Responsibility for Professional Engineers and Professional Surveyors or Land Surveyors against any individual licensee or against any firm holding a certificate of authorization.

B. All charges, unless dismissed by the board as unfounded, trivial, or unless settled informally, shall be heard by the board.

[B. The time and place for the hearings shall be fixed by the board and a copy of the charges, together with a notice of the time and place of hearing, shall be personally served on or mailed to the last known address of such individual licensee or firm holding a certificate of authorization at least thirty days before the date fixed for the hearing. At any hearing, the accused individual licensee or firm holding a certificate of authorization shall have the right to appear in person or by counsel, or both, to cross-examine witnesses in their defense and to produce evidence and witnesses in their own defense. If the accused person or firm fails or refuses to appear, the board may proceed to hear and determine the validity of the charges.]

C. If after such hearing a majority of the board votes in favor of sustaining the charges, the board shall reprimand, fine in an amount not to exceed ..... dollars ($.....) for each count,

refuse to issue, restore or renew, place on probation for a period of time, and subject to such conditions as the board may specify, suspend, revoke, or any combination thereof, the individual's certificate of licensure or a firm's certificate of authorization.

D. An individual licensee having a certificate of licensure or a firm having a certificate of authorization aggrieved by any action of the board in levying a fine, denying, suspending, refusing to issue, restore or renew, or revoking their certificate of licensure or a firm's certificate of authorization, may appeal therefrom to the proper court under normal civil procedures.

E. A penalty assessed pursuant to Section 150.10 B of this Act shall be assessed in a proceeding as provided in this section. Unless the amount of the penalty is paid within 50 days after the order becomes final, the order shall constitute a judgment and shall be filed and execution issued thereon in the same manner as any other judgment of a court of record.

F. The board may, upon petition of an individual licensee or firm holding a certificate of authorization, reissue a certificate of licensure or authorization, provided that a majority of the members of the board votes in favor of such issuance.

150.30 Civil Penalties for Non-Licensees

A. In addition to any other provisions of law, the board may enter an order assessing a civil penalty against any person, firm, partnership or corporation found guilty by the board of:
   1. Engaging in the practice or offer to practice of engineering or surveying or land surveying in this jurisdiction without being licensed in accordance with the provisions of this Act;
   2. Using or employing the words "engineer," "engineering," "surveyor," "land surveyor," "surveying," "land surveying," or any modification or derivative thereof in its name or form of business activity except as authorized in this Act;
   3. Presenting or attempting to use the certificate of licensure or the seal of another licensed engineer or licensed surveyor or licensed land surveyor;
   4. Giving false or forged evidence of any kind to the board or any member thereof in obtaining or attempting to obtain a certificate of licensure;
   5. Falsely impersonating any other licensed engineer or licensed surveyor or land surveyor of like or different name; or
   6. Using or attempting to use an expired, suspended, or revoked or non-existent certificate of licensure.

B. A civil penalty levied under this section may not exceed $5,000 for each offense.

C. Each day of continued violation may constitute a separate offense.

D. In determining the amount of civil penalty to be assessed pursuant to this section, the board may consider such factors as the following:
   1. Whether the amount imposed will be a substantial economic deterrent to the violation;
   2. The circumstances leading to the violation;
   3. The severity of the violation and the risk of harm to the public;
   4. The economic benefits gained by the violator as a result of non-compliance; and
   5. The interest of the public.

E. Before issuing an order under this section, the board shall provide the person written notice and the opportunity to request, within 30 days of issuance of notice by the board, a hearing on the record.

F. In connection with proceeding under Subsections A and B of this section, the board may issue subpoenas to compel the attendance and testimony of witnesses and the disclosure of evidence, and may request the attorney general to bring an action to enforce a subpoena.
G. A person aggrieved by the levy of a civil penalty under this section may file an appeal with the superior court for judicial review of the penalty aforementioned.
H. If a person fails to pay a civil penalty within 30 days after entry of an order under Subsection A of this section, or if the order is stayed pending an appeal, within 10 days after the court enters a final judgment in favor of the board of an order appealed under Subsection E of this section, the board shall notify the attorney general. The attorney general may commence a civil action to recover the amount of the penalty, plus attorney's fees and costs.
I. An action to enforce an order under this section may be combined with an action for an injunction.

150.40 Criminal Offenses

Any person who shall practice or offer to practice engineering or surveying or land surveying in this jurisdiction being licensed in accordance with the provisions of this Act, or any person, firm, partnership, organization, association, corporation, or other entity using or employing the words "Engineer" or "Engineering" or "Surveyor" or "Land Surveyor" or "Surveying" or "Land Surveying," or any modification or derivative thereof in its name or form of business activity except as authorized in this Act, or any person presenting or attempting to use the certificate of licensure or the seal of another, or any person who shall give any false or forged evidence of any kind to the board or to any member thereof in obtaining or attempting to obtain a certificate of licensure, or any person who shall falsely impersonate any other licensee of like or different name, or any person who shall attempt to use an expired, suspended or revoked, or non-existent certificate of licensure, or who shall practice or offer to practice when not qualified, or any person who falsely claims that they are licensed or authorized under this Act, or any person who shall violate any of the provisions of the Act, shall be guilty of a (highest degree of) misdemeanor for the first offense and a (lowest degree of) felony for the second or any subsequent offenses.

It shall be the duty of the attorney general of the jurisdiction to enforce the provisions of this Act and to prosecute any person violating same.

The attorney general of the jurisdiction or the assistant shall act as legal adviser to the board and render such legal assistance as may be necessary in carrying out the provisions of this Act. The board may employ counsel and necessary assistance to aid in the enforcement of this Act and the compensation and expenses therefore shall be paid from the funds of the board.

160 MISCELLANEOUS

160.10 Certificates of Authorization

A. The practice of, or offer to practice engineering or surveying or land surveying through a firm by individuals licensed under this Act, is permitted, provided that the persons in responsible charge of such practice and all personnel who act on behalf of the firm in professional matters are licensed under this Act; and further that the firm has been issued a certificate of authorization by the board.
B. An engineering or surveying or land surveying firm desiring a certificate of authorization must file with the board an application using a form provided by the board and provide all

the information required by the board. A form as provided by the board shall be filed with the board upon renewal or within thirty days of the time any information contained on the application form is changed or differs for any reason. If in the judgment of the board the application meets the requirements of this Act, the board shall issue a certificate of authorization for said firm to practice engineering or land.

C. This section shall not require a certificate of authorization for a firm performing engineering or surveying or land surveying for the firm itself or a parent or subsidiary of said firm.

D. No firm shall be relieved of responsibility for the conduct or acts of its agents, employees, officers, partners, members, or managers by reason of its compliance with the provisions of this section. No individual practicing engineering or surveying or land surveying under the provisions of this Act shall be relieved of responsibility for engineering or surveying or land surveying services performed by reason of employment or other relationship with a firm holding a certificate of authorization.

E. The secretary of state of this jurisdiction shall not accept organizational papers nor issue a certificate of incorporation, licensure, or authorization to any firm which includes among the objectives for which it is established or within its name, any of the words "engineer," "engineering," "surveyor," "land surveyor," "surveying," "land surveying," or any modification or derivation thereof unless the board of licensure for this profession has issued for said applicant a certificate of authorization or a letter indicating the eligibility of such applicant to receive such a certificate. The firm applying shall supply such certificate or letter from the board with its application for incorporation, licensure, or authorization.

F. The secretary of state of this jurisdiction shall decline to license any trade name or service mark which includes such words, as set forth in the above article, or modifications or derivatives thereof in its firm name or logotype except those firms holding certificates of authorization issued under the provisions of this section.

G. The certificate of authorization shall be renewed as hereinbefore provided in Section 140.20.

H. An engineer or surveyor or land surveyor who renders occasional, part-time, or consulting engineering or surveying or land surveying services to or for a firm may not, for the purposes of this section, be designated as being in responsible charge of the professional activities of the firm unless the engineer or surveyor or land surveyor is an officer or owner of the firm.

160.20 Exemption Clause

This Act shall not be construed to prevent the practice by:

A. Other Professions – The practice of any other legally recognized profession.

B. Contingent Permits – A contingent license may be issued by the board or its Executive Officer to an applicant for comity licensure if the applicant appears to meet the requirements for comity licensure. Such a contingent license will be in effect from its date of issuance until such time as the board takes final action on the application for comity licensure. If the board determines that the applicant does not meet the requirements for issuance of a comity license, the contingent license shall be immediately and automatically revoked and no comity license will be issued.

C. Employees and Subordinates – The work of an employee or a subordinate of a person holding a certificate of licensure under this Act, or an employee of a person practicing lawfully under Subsection B of this section, provided such work does not include final engineering or surveying or land surveying designs or decisions and is done under the

direct supervision of and verified by a person holding a certificate of licensure under this Act or a person practicing lawfully under Subsection B of this section.

160.30 Duties of Recorders

It shall be unlawful for the recorder of deeds or the registrar of titles of any county or proper public authority to file or record any map, plat, survey, or other documents within the definition of land surveying *as set forth in this Act* which do not have impressed thereon and affixed thereto the personal signature and seal of a professional surveyor or land surveyor by whom or under whose direct supervision the map, plat, survey, or other documents were prepared.

160.40 Invalid Sections

If any of the provisions of this Act or if any rule, regulation, or order thereunder or if the application of such provision to any person or circumstance shall be held invalid, the remainder of this Act and the application of such provision of this Act or such rule, regulation or order to persons or circumstances, other than those as to which it is held invalid, shall not be affected thereby.

160.50 Repeal of Conflicting Legislation

All laws or parts of laws in conflict with the provisions of this Act shall be, and the same are hereby repealed.

160.60 Grandfathering of Photogrammetrists

A. Licensure of Professionals Currently Practicing Surveying or Land Surveying as defined in the *Model Law,* Section 110.20 B.5.a. – Any person presently practicing surveying in the jurisdiction of ....., as defined in Section 110.20 of (the *Model Law*), using photogrammetric technologies with at least eight years' experience in the profession, two or more of which shall have been in responsible charge of photogrammetric mapping projects meeting ASPRS Aerial Photography and Mapping Standards, or U.S. National Mapping Standards, shall, upon application, be licensed to practice surveying and/or mapping in the jurisdiction of ....., provided:

1. The applicant submits certified proof of graduation from high school, high school equivalency, or a higher degree.
2. The applicant, optionally, submits: certified proof of a baccalaureate degree in surveying or a related field of study approved by the (Board), which may be substituted for four of the above required years of experience; or certified proof of a master's degree in surveying or a related field of study approved by the (Board), which may be substituted for a maximum of five of the above required years of experience.
3. The applicant submits proof of employment in responsible charge of photogrammetric surveying and/or mapping projects, practicing within any of the fifty United States, including itemized reports detailing methods, procedures, amount of the applicant's personal involvement, and the name, address, and telephone numbers of the client for five projects completed under the supervision of the applicant within the United States. A final map for each of the five projects shall also be submitted.
4. The applicant submits five references as to the applicant's character and quality of work, three of which shall be from professional surveyors, mappers, or engineers

currently practicing within the scope of their license in an area of surveying and/or mapping.

5. Said application is filed with the Board within two years, next after _____ 20__. Thereafter, no photogrammetric surveyor or mapper shall be licensed without meeting the requirements for education, length of experience, testing, or reciprocity criteria, as set forth by the Board for all applicants.

160.70 Effective Date

This law shall take effect ..... days from and after the date of passage.

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MODEL RULES
OF
PROFESSIONAL CONDUCT

REVISED AUGUST 2002

NATIONAL COUNCIL OF EXAMINERS
FOR ENGINEERING AND SURVEYING®

MODEL RULES OF PROFESSIONAL CONDUCT

Preamble

To comply with the purpose of the (identify jurisdiction, licensing statute)—which is to safeguard life, health, and property, to promote the public welfare, and to maintain a high standard of integrity and practice—the (identify board, licensing statute) has developed the following *Rules of Professional Conduct*. These rules shall be binding on every person holding a certificate of licensure to offer or perform engineering or land surveying services in this state. All persons licensed under (identify jurisdiction's licensing statute) are required to be familiar with the licensing statute and these rules. The *Rules of Professional Conduct* delineate specific obligations the licensee must meet. In addition, each licensee is charged with the responsibility of adhering to the highest standards of ethical and moral conduct in all aspects of the practice of professional engineering and land surveying.

The practice of professional engineering and land surveying is a privilege, as opposed to a right. All licensees shall exercise their privilege of practicing by performing services only in the areas of their competence according to current standards of technical competence.

Licensees shall recognize their responsibility to the public and shall represent themselves before the public only in an objective and truthful manner.

They shall avoid conflicts of interest and faithfully serve the legitimate interests of their employers, clients, and customers within the limits defined by these rules. Their professional reputation shall be built on the merit of their services, and they shall not compete unfairly with others.

The *Rules of Professional Conduct* as promulgated herein are enforced under the powers vested by (identify jurisdiction's enforcing agency). In these rules, the word "licensee" shall mean any person holding a license or a certificate issued by (identify jurisdiction's licensing agency).

RULES OF PROFESSIONAL CONDUCT

I. LICENSEE'S OBLIGATION TO SOCIETY

a. Licensees, in the performance of their services for clients, employers, and customers, shall be cognizant that their first and foremost responsibility is to the public welfare.

b. Licensees shall approve and seal only those design documents and surveys that conform to accepted engineering and land surveying standards and safeguard the life, health, property, and welfare of the public.

c. Licensees shall notify their employer or client and such other authority as may be appropriate when their professional judgment is overruled under circumstances where the life, health, property, or welfare of the public is endangered.

d. Licensees shall be objective and truthful in professional reports, statements, or testimony. They shall include all relevant and pertinent information in such reports, statements, or testimony.

e. Licensees shall express a professional opinion publicly only when it is founded upon an adequate knowledge of the facts and a competent evaluation of the subject matter.

f. Licensees shall issue no statements, criticisms, or arguments on technical matters which are inspired or paid for by interested parties, unless they explicitly identify the interested parties on whose behalf they are speaking and reveal any interest they have in the matters.

g. Licensees shall not permit the use of their name or firm name by, nor associate in the business ventures with, any person or firm which is engaging in fraudulent or dishonest business or professional practices.

h. Licensees having knowledge of possible violations of any of these *Rules of Professional Conduct* shall provide the board with the information and assistance necessary to make the final determination of such violation.

II. LICENSEE'S OBLIGATION TO EMPLOYER AND CLIENTS

a. Licensees shall undertake assignments only when qualified by education or experience in the specific technical fields of engineering or land surveying involved.

b. Licensees shall not affix their signatures or seals to any plans or documents dealing with subject matter in which they lack competence, nor to any such plan or document not prepared under their direct control and personal supervision.

c. Licensees may accept assignments for coordination of an entire project, provided that each design segment is signed and sealed by the licensee responsible for preparation of that design segment.

d. Licensees shall not reveal facts, data, or information obtained in a professional capacity without the prior consent of the client or employer except as authorized or required by law.

e. Licensees shall not solicit or accept gratuities, directly or indirectly, from contractors, their agents, or other parties in connection with work for employers or clients.

f. Licensees shall make full prior disclosures to their employers or clients of potential conflicts of interest or other circumstances which could influence or appear to influence their judgment or the quality of their service.

g. Licensees shall not accept compensation, financial or otherwise, from more than one party for services pertaining to the same project, unless the circumstances are fully disclosed and agreed to by all interested parties.

h. Licensees shall not solicit or accept a professional contract from a governmental body on which a principal or officer of their organization serves as a member. Conversely, licensees serving as members, advisors, or employees of a government body or department, who are the principals or employees of a private concern, shall not participate in decisions with respect to professional services offered or provided by said concern to the governmental body which they serve.

III. LICENSEE'S OBLIGATION TO OTHER LICENSEES

a. Licensees shall not falsify or permit misrepresentation of their, or their associates', academic or professional qualifications. They shall not misrepresent or exaggerate their degree of responsibility in prior assignments nor the complexity of said assignments. Presentations incident to the solicitation of employment or business shall not misrepresent pertinent facts concerning employers, employees, associates, joint ventures, or past accomplishments.

b. Licensees shall not offer, give, solicit, or receive, either directly or indirectly, any commission, or gift, or other valuable consideration in order to secure work, and shall not make any political contribution with the intent to influence the award of a contract by public authority.

c. Licensees shall not attempt to injure, maliciously or falsely, directly or indirectly, the professional reputation, prospects, practice, or employment of other licensees, nor indiscriminately criticize other licensees' work.

National Society of Professional Engineers

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NSPE Code of Ethics for Engineers

Preamble

Engineering is an important and learned profession. As members of this profession, engineers are expected to exhibit the highest standards of honesty and integrity. Engineering has a direct and vital impact on the quality of life for all people. Accordingly, the services provided by engineers require honesty, impartiality, fairness and equity, and must be dedicated to the protection of the public health, safety, and welfare. Engineers must perform under a standard of professional behavior that requires adherence to the highest principles of ethical conduct.

I. Fundamental Canons

Engineers, in the fulfillment of their professional duties, shall:

1. Hold paramount the safety, health and welfare of the public.
2. Perform services only in areas of their competence.
3. Issue public statements only in an objective and truthful manner.
4. Act for each employer or client as faithful agents or trustees.
5. Avoid deceptive acts.
6. Conduct themselves honorably, responsibly, ethically, and lawfully so as to enhance the honor, reputation, and usefulness of the profession.

II. Rules of Practice

1. Engineers shall hold paramount the safety, health, and welfare of the public.
   a. If engineers' judgment is overruled under circumstances that endanger life or property, they shall notify their employer or client and such other authority as may be appropriate.
   b. Engineers shall approve only those engineering documents that are in conformity with applicable standards.
   c. Engineers shall not reveal facts, data or information without the prior consent of the client or employer except as authorized or required by law or this Code.
   d. Engineers shall not permit the use of their name or associate in business ventures with any person or firm that they believe are engaged in fraudulent or dishonest enterprise.
   e. Engineers shall not aid or abet the unlawful practice of engineering by a person or firm.
   f. Engineers having knowledge of any alleged violation of this Code shall report thereon to appropriate professional bodies and, when relevant, also to public authorities, and cooperate with the proper authorities in furnishing such information or assistance as may be required.

2. Engineers shall perform services only in the areas of their competence.
   a. Engineers shall undertake assignments only when qualified by education or experience in the specific technical fields involved.
   b. Engineers shall not affix their signatures to any plans or documents dealing with subject matter in which they lack competence, nor to any plan or document not prepared under their direction and control.
   c. Engineers may accept assignments and assume responsibility for coordination of an entire project and sign and seal the engineering documents for the entire project, provided that each technical segment is signed and sealed only by the qualified engineers who prepared the segment.

3. Engineers shall issue public statements only in an objective and truthful manner.
   a. Engineers shall be objective and truthful in professional reports, statements, or testimony. They shall include all relevant and pertinent information in such reports, statements, or testimony, which should bear the date indicating when it was current.
   b. Engineers may express publicly technical opinions that are founded upon knowledge of the facts and competence in the subject matter.
   c. Engineers shall issue no statements, criticisms, or arguments on technical matters that are inspired or paid for by interested parties, unless they have prefaced their comments by explicitly identifying the interested parties on whose behalf they are speaking, and by revealing the existence of any interest the engineers may have in the matters.

4. Engineers shall act for each employer or client as faithful agents or trustees.
   a. Engineers shall disclose all known or potential conflicts of interest that could influence or appear to influence their judgment or the quality of their services.
   b. Engineers shall not accept compensation, financial or otherwise, from more than one party for services on the same project, or for services pertaining to the same project, unless the circumstances are fully disclosed and agreed to by all interested parties.
   c. Engineers shall not solicit or accept financial or other valuable consideration, directly or indirectly, from outside agents in connection with the work for which they are responsible.
   d. Engineers in public service as members, advisors, or employees of a governmental or quasi-governmental body or department shall not participate in decisions with respect to services solicited or provided by them or their organizations in private or public engineering practice.
   e. Engineers shall not solicit or accept a contract from a governmental body on which a principal or officer of their organization serves as a member.

5. Engineers shall avoid deceptive acts.
   a. Engineers shall not falsify their qualifications or permit misrepresentation of their or their associates' qualifications. They shall not misrepresent or exaggerate their responsibility in or for the subject matter of prior assignments. Brochures or other presentations incident to the solicitation of employment shall not misrepresent pertinent facts concerning employers, employees, associates, joint venturers, or past accomplishments.
   b. Engineers shall not offer, give, solicit or receive, either directly or indirectly, any contribution to influence the award of a contract by public authority, or which may be reasonably construed by the public as having the effect of intent to influencing the awarding of a contract. They shall not offer any gift or other valuable consideration in order to secure work. They shall not pay a commission, percentage, or brokerage fee in order to secure work, except to a bona fide employee or bona fide established commercial or marketing agencies retained by them.

III. Professional Obligations

1. Engineers shall be guided in all their relations by the highest standards of honesty and integrity.
   a. Engineers shall acknowledge their errors and shall not distort or alter the facts.
   b. Engineers shall advise their clients or employers when they believe a project will not be successful.
   c. Engineers shall not accept outside employment to the detriment of their regular work or interest. Before accepting any outside engineering employment they will notify their employers.
   d. Engineers shall not attempt to attract an engineer from another employer by false or misleading pretenses.
   e. Engineers shall not promote their own interest at the expense of the dignity and integrity of the profession.

2. Engineers shall at all times strive to serve the public interest.
   a. Engineers shall seek opportunities to participate in civic affairs; career guidance for youths; and work for the advancement of the safety, health and well-being of their community.
   b. Engineers shall not complete, sign, or seal plans and/or specifications that are not in conformity with applicable engineering standards. If the client or employer insists on such unprofessional conduct, they shall notify the proper authorities and withdraw from further service on the project.
   c. Engineers shall endeavor to extend public knowledge and appreciation of engineering and its achievements.

3. Engineers shall avoid all conduct or practice that deceives the public.
   a. Engineers shall avoid the use of statements containing a material misrepresentation of fact or omitting a material fact.
   b. Consistent with the foregoing, Engineers may advertise for recruitment of personnel.
   c. Consistent with the foregoing, Engineers may prepare articles for the lay or technical press, but such articles shall not imply credit to the author for work performed by others.

4. Engineers shall not disclose, without consent, confidential information concerning the business affairs or technical processes of any present or former client or employer, or public body on which they serve.

a. Engineers shall not, without the consent of all interested parties, promote or arrange for new employment or practice in connection with a specific project for which the Engineer has gained particular and specialized knowledge.
b. Engineers shall not, without the consent of all interested parties, participate in or represent an adversary interest in connection with a specific project or proceeding in which the Engineer has gained particular specialized knowledge on behalf of a former client or employer.

5. Engineers shall not be influenced in their professional duties by conflicting interests.
   a. Engineers shall not accept financial or other considerations, including free engineering designs, from material or equipment suppliers for specifying their product.
   b. Engineers shall not accept commissions or allowances, directly or indirectly, from contractors or other parties dealing with clients or employers of the Engineer in connection with work for which the Engineer is responsible.

6. Engineers shall not attempt to obtain employment or advancement or professional engagements by untruthfully criticizing other engineers, or by other improper or questionable methods.
   a. Engineers shall not request, propose, or accept a commission on a contingent basis under circumstances in which their judgment may be compromised.
   b. Engineers in salaried positions shall accept part-time engineering work only to the extent consistent with policies of the employer and in accordance with ethical considerations.
   c. Engineers shall not, without consent, use equipment, supplies, laboratory, or office facilities of an employer to carry on outside private practice.

7. Engineers shall not attempt to injure, maliciously or falsely, directly or indirectly, the professional reputation, prospects, practice, or employment of other engineers. Engineers who believe others are guilty of unethical or illegal practice shall present such information to the proper authority for action.
   a. Engineers in private practice shall not review the work of another engineer for the same client, except with the knowledge of such engineer, or unless the connection of such engineer with the work has been terminated.
   b. Engineers in governmental, industrial, or educational employ are entitled to review and evaluate the work of other engineers when so required by their employment duties.
   c. Engineers in sales or industrial employ are entitled to make engineering comparisons of represented products with products of other suppliers.

8. Engineers shall accept personal responsibility for their professional activities, provided, however, that Engineers may seek indemnification for services arising out of their practice for other than gross negligence, where the Engineer's interests cannot otherwise be protected.
   a. Engineers shall conform with state registration laws in the practice of engineering.
   b. Engineers shall not use association with a nonengineer, a corporation, or partnership as a "cloak" for unethical acts.

9. Engineers shall give credit for engineering work to those to whom credit is due, and will recognize the proprietary interests of others.
   a. Engineers shall, whenever possible, name the person or persons who may be individually responsible for designs, inventions, writings, or other accomplishments.
   b. Engineers using designs supplied by a client recognize that the designs remain the property of the client and may not be duplicated by the Engineer for others without express permission.
   c. Engineers, before undertaking work for others in connection with which the Engineer may make improvements, plans, designs, inventions, or other records that may justify copyrights or patents, should enter into a positive agreement regarding ownership.
   d. Engineers' designs, data, records, and notes referring exclusively to an employer's work are the employer's property. Employer should indemnify the Engineer for use of the information for any purpose other than the original purpose.

As Revised July 2002

"By order of the United States District Court for the District of Columbia, former Section 11(c) of the NSPE Code of Ethics prohibiting competitive bidding, and all policy statements, opinions, rulings or other guidelines interpreting its scope, have been rescinded as unlawfully interfering with the legal right of engineers, protected under the antitrust laws, to provide price information to prospective clients; accordingly, nothing contained in the NSPE Code of Ethics, policy statements, opinions, rulings or other guidelines prohibits the submission of price quotations or competitive bids for engineering services at any time or in any amount."

Statement by NSPE Executive Committee:
In order to correct misunderstandings which have been indicated in some instances since the issuance of the Supreme Court decision and the entry of the Final Judgment, it is noted that in its decision of April 25, 1978, the Supreme Court of the United States declared: "The Sherman Act does not require competitive bidding."

It is further noted that as made clear in the Supreme Court decision:
1. Engineers and firms may individually refuse to bid for engineering services.
2. Clients are not required to seek bids for engineering services.
3. Federal, state, and local laws governing procedures to procure engineering services are not affected, and remain in full force and effect.
4. State societies and local chapters are free to actively and aggressively seek legislation for professional selection and negotiation procedures by public agencies.
5. State registration board rules of professional conduct, including rules prohibiting competitive bidding for engineering services, are not affected and remain in full force and effect. State registration boards with authority to adopt rules of professional conduct may adopt rules governing procedures to obtain engineering services.
6. As noted by the Supreme Court, "nothing in the judgment prevents NSPE and its members from attempting to influence governmental action . . ."

NOTE: In regard to the question of application of the Code to corporations vis-à-vis real persons, business form or type should not negate nor influence conformance of individuals to the Code. The Code deals with professional services, which services must be performed by real persons. Real persons in turn establish and implement policies within business structures. The Code is clearly written to apply to the Engineer and items incumbent on members of NSPE to endeavor to live up to its provisions. This applies to all pertinent sections of the Code.

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NATIONAL COUNCIL OF EXAMINERS
FOR ENGINEERING AND SURVEYING

CONTINUING PROFESSIONAL COMPETENCY GUIDELINES

REVISED DECEMBER 1998

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FOREWORD

This manual has been prepared by the National Council of Examiners for Engineering and Surveying (NCEES) to provide guidelines for the jurisdictions and territories that have or are planning to have continuing professional competency (CPC) requirements for relicensing. A number of jurisdictions already require CPC for professional licensure, and a number of other jurisdictions have or are requesting enabling legislation to permit or require mandatory CPC within the near future. The official position of the NCEES concerning CPC is provided as follows in the NCEES *Policy Manual* in the professional policy called Continuing Professional Competency:

> The NCEES commends and endorses the efforts of the professional and technical societies, engineering and surveying schools, and industry in the areas of continuing education and competency for engineers and surveyors.
>
> The NCEES endorses the continued professional competency guidelines contained in its professional policies and its *Model Rules and Regulations* for evaluation of a licensee's efforts to maintain or improve competency to continue to practice engineering and land surveying.
>
> The NCEES endorses comity among licensure jurisdictions and encourages the careful evaluation of any additional requirements for licensure that would tend to interfere with reciprocal licensing between jurisdictions.
>
> Applicants for licensure by comity or endorsement shall not be denied licensure because their jurisdiction of licensure does not have a continuing professional competency, or similarly named, requirement.

This manual was developed to assist jurisdictions in preparing rules, requirements, forms, and instructions that will establish generally accepted standards to facilitate the earning and reporting of CPC credits when relicensing. Since engineers, and land surveyors to a lesser extent, are often licensed in multiple jurisdictions, the need to avoid many variations of requirements is apparent. In addition, this manual is designed to assist jurisdictions in their dealings with licensees and suppliers of CPC activities. It is intended to assist in their understanding of requirements, criteria, and processes.

This manual was prepared within the NCEES by its Committee on Uniform Procedures and Legislative Guidelines (UPLG) with assistance from the Committee on Member Board Administrators. In addition, acknowledgement and credit is due to those jurisdictions that have pioneered the early adoption of CPC for land surveyors and engineers. Much of their work has been incorporated into this manual or has influenced its direction.

Comments, corrections, suggestions, or requests for additional information may be addressed to:

National Council of Examiners
for Engineering and Surveying
P.O. Box 1686
Clemson, SC 29633-1686
(864) 654-6824
www.ncees.org

SECTION 1 - NCEES *MODEL LAW*

The NCEES *Model Law* authorizes continuing professional competency (CPC) in Section 8, Board Powers. Paragraph (e) states: "The board shall have the power and authority to require a demonstration of continuing professional competency of engineers and land surveyors as a condition of renewal or relicensure."

This paragraph empowers a board to require CPC for relicensing and enables the board to specify CPC requirements that its licensees must meet. This wording does not mandate but rather permits CPC for relicensing when a board so elects. It is also highly desirable to encourage this or similar wording in the law so that the board can specify the requirements in its administrative rules. As outlined in the Foreword, comity and uniformity of requirements for CPC among jurisdictions are very desirable. This wording of a jurisdiction's law would permit its board to effect those provisions.

SECTION 2 - NCEES *MODEL RULES*

For each jurisdiction that adopts mandatory CPC for relicensing, the administrative rule provides the fundamental framework of the requirements its licensees must meet. As increasing numbers of jurisdictions implement CPC, the importance of uniformity of the administrative rule among the jurisdictions becomes more urgent. If each jurisdiction requires a different variation of the rule, then multiple-jurisdiction licensees must keep track of what opportunities are acceptable in each jurisdiction and maintain separate logs of activities. When this is coupled with the various periods of renewal among the jurisdictions (such as annual or biennial, various months in which renewal is effected, and even various months depending upon the licensee's last name), then the requirement of keeping up with what is accepted by each jurisdiction could become a difficult and burdensome chore for multijurisdictional licensees.

In order to overcome these difficulties, the NCEES recommends careful consideration of the administrative rule for CPC that may be adopted and urges all jurisdictions to remain as consistent with the NCEES Model Rules *as is possible.*

Model Rules, SECTION 14. CONTINUING PROFESSIONAL COMPETENCY

The continuing professional competency guidelines are set forth below for the purpose of providing consistency in those jurisdictions that adopt mandatory requirements or for those jurisdictions that wish to encourage voluntary usage. The purpose of the continuing professional competency requirement is to demonstrate a continuing level of competency of professional engineers and/or land surveyors.

A. Introduction

Every licensee shall meet the continuing professional competency requirements of these regulations for professional development as a condition for licensure renewal.

B. Definitions

Terms used in this section are defined as follows:

1. Professional Development Hour (PDH) - A contact hour (nominal) of instruction or presentation. The common denominator for other units of credit.
2. Continuing Education Unit (CEU) - Unit of credit customarily used for continuing education courses. One continuing education unit equals 10 hours of class in approved continuing education course.

3. College/Unit Semester/Quarter Hour - Credit for course in ABET-approved programs or other related college course approved in accordance with article (e) of this section.
4. Course/Activity - Any qualifying course or activity with a clear purpose and objective which will maintain, improve, or expand the skills and knowledge relevant to the licensee's field of practice.
5. Dual Licensee - A person who is licensed as both an engineer and a land surveyor.

C. Requirements

Every licensee is required to obtain 15 (30 if biennial) PDH units during the renewal period year. If a licensee exceeds the annual requirement in any renewal period, a maximum of 15 PDH units may be carried forward into the subsequent renewal period. PDH units may be earned as follows:

1. Successful completion of college courses.
2. Successful completion of continuing education courses.
3. Successful completion of correspondence, televised, videotaped, and other short courses/tutorials.
4. Presenting or attending qualifying seminars, in-house courses, workshops, or professional or technical presentations made at meetings, conventions, or conferences.
5. Teaching or instructing in (1) through (4) above.
6. Authoring published papers, articles, or books.
7. Active participation in professional or technical societies.
8. Patents.

D. Units

The conversion of other units of credit to PDH units is as follows:

1.	1 College or unit semester hour	45 PDH
2.	1 College or unit quarter hour	30 PDH
3.	1 Continuing Education Unit	10 PDH
4.	1 Hour of professional development in course work, seminars, or professional or technical presentations made at meetings, conventions, or conferences	1 PDH
5.	For teaching apply multiple of 2*	
6.	Each published paper, article, or book	10 PDH
7.	Active participation in professional and technical society. (Each organization.)	2 PDH
8.	Each patent.	10 PDH

** Teaching credit is valid for teaching a course or seminar for the first time only. Teaching credit does not apply to full-time faculty.*

E. Determination of Credit

The board of licensure has final authority with respect to approval of courses, credit, PDH value for courses, and other methods of earning credit.

1. Credit for college or community college approved courses will be based upon course credit established by the college.

2. Credit for qualifying seminars and workshops will be based on one PDH unit for each hour of attendance. Attendance at qualifying programs presented at professional and/or technical society meetings will earn PDH units for the actual time of each program.
3. Credit determination for activities D6 and D8 is the responsibility of the licensee (subject to review as required by the board).
4. Credit for activity D7, active participation in professional and technical societies (limited to 2 PDH per organization), requires that a licensee serve as an officer and/or actively participate in a committee of the organization. PDH credits are not earned until the end of each year of service is completed.

F. Recordkeeping

The responsibility of maintaining records to be used to support credits claimed is the responsibility of the licensee. Records required include, but are not limited to: 1) a log showing the type of activity claimed, sponsoring organization, location, duration, instructor's or speaker's name, and PDH credits earned; 2) attendance verification records in the form of completion certificates or other documents supporting evidence of attendance; or 3) records as maintained by the NCEES' CPC Tracking Program or other similar repositories. These records must be maintained, and copies may be requested by the board for audit verification purposes.

G. **Exemptions**

A licensee may be exempt from the professional development educational requirements for one of the following reasons:

1. New licensees by way of examination or comity shall be exempt for their first renewal period.
2. A licensee serving on temporary active duty in the armed forces of the United States for a period of time exceeding one hundred twenty (120) consecutive days in a year shall be exempt from obtaining the professional development hours required during that year.
3. Licensees experiencing physical disability, illness, or other extenuating circumstances as reviewed and approved by the board may be exempt. Supporting documentation must be furnished to the board.
4. Licensees who list their occupation as "Retired" on the board approved renewal form and who further certify that they are no longer receiving any remuneration from providing professional engineering or land surveying services shall be exempt from the professional development hours required. In the event such a person elects to return to active practice of professional engineering or land surveying, professional development hours must be earned before returning to active practice for each year exempted, not to exceed the annual requirement for two years.

H. **Reinstatement**

A licensee may bring an inactive license to active status by obtaining all delinquent PDH units. However, if the total number required to become current exceeds 30, then 30 shall be the maximum number required.

I. **Comity/Out-of-Jurisdiction Resident**

The CPC requirements for <jurisdiction> will be satisfied when a non-resident certifies to be licensed in and having met the mandatory CPC requirements of any jurisdiction approved and listed by <jurisdiction>.

J. **Dual Licensees**
The number of PDH units required shall remain 15, at least 1/3 of which shall be obtained in each profession.

K. **Forms**
All renewal applications will require the completion of a continuing education form specified by the board outlining PDH credit claimed. The licensee must supply sufficient detail on the form to permit audit verification, must certify and sign the continuing education form, and must submit the form with the renewal application and fee.

SECTION 3 - CRITERIA FOR ACTIVITIES

The law and the rule adopted in jurisdictions having CPC requirements are the definitive documents which govern what licensees must do to meet periodic relicensing or requirements. These documents, however, are succinctly written and do not cover rationale or give examples that explain and illustrate in-depth what is expected of the licensee. Additional information is given to licensees on the renewal form and in instructions that accompany the form. A model renewal form and renewal instructions are shown in Appendix A and Appendix B respectively.

This section supplements these sources of information and gives a more complete understanding of the intent of the rule. This information may be useful to licensing boards considering the adoption of rules, forms, or instructions; to licensees who are attempting to meet the requirements; to suppliers or sponsors of CPC activities; and to employers of licensees who may consider becoming sponsors of qualifying "in-house" CPC activities.

Credit Criteria for All Qualifying CPC Activities

The primary purpose of licensing for professional engineers and professional land surveyors is to protect the public from unqualified or unethical practitioners. The requirement for CPC is also intended to protect the public by reinforcing the need for lifelong learning in order to stay current with changing technology, equipment, procedures, processes, tools, and established standards. The rule specifying qualifying CPC activities was designed to give flexibility in selecting among a broad range of subjects that are intended to strengthen or maintain competency in technical, managerial (business), or ethical fields.

Licensees are encouraged to select meaningful CPC activities which will be of benefit in the pursuit of their chosen fields. The *Model Rules* provides a definition of course/activity as follows:

- "Any qualifying course or activity with a clear purpose and objective which will maintain, improve, or expand the skills and knowledge relevant to the licensee's field of practice. "

In the remainder of this section, all references to CPC activities or credits assume that such activities or credits are *qualifying* as described above. Examples of typical qualifying and non-qualifying activities are listed later in this section.

Professional Development Hour(s)

The term "professional development hour" or "professional development hours" (both abbreviated PDH) is defined as a contact hour (nominal) of instruction or presentation. It is the common denominator for the other

units of credit. Experience in jurisdictions having CPC reveals that a number of erroneous interpretations concerning this definition of a PDH can occur. For example, consider a one-day seminar that begins at 8 a.m. and ends at 5 p.m. with a one-hour break for lunch.

The *Model Rules* intends that the *maximum* PDH units that can be earned for this seminar is eight. But the question invariably arises, What about a morning and afternoon break of 20 minutes each? The general understanding is that short-term breaks are permissible as long as a minimum of 50 minutes of presentation/participation per hour is undertaken. If there are no breaks, or breaks of less than 10 minutes per hour are included, *no additional time may be claimed*. Seminar presenters may attempt to take the number of elapsed minutes (such as 8 hours times 60 minutes) and then divide by 50 to arrive at the PDH units for which the seminar is advertised. This would result in over nine PDH in an eight-hour period, which is not permitted. *The general rule is that PDH units cannot exceed the actual contact clock hours.*

The *Model Rules* is silent about how to handle fractions of hours. It is recommended that PDH units be rounded and reported to the nearest half hour and that no activity of under a half hour be accepted as qualifying for PDH credit. For example, a qualifying activity of 50 minutes would be reported as one PDH, and an activity of 40 minutes would be reported as a half PDH.

PDH Credit Requirements

The rule specifies that every licensee is required to obtain 15 PDH (30 PDH if biennial) during the renewal period. If a licensee exceeds the annual requirement in any renewal period, a maximum of 15 PDH units may be carried forward into the next renewal period. The question arises, Can a licensee who earns, for example, 55 PDH in a two-year biennial period carry forward 25 into the next biennial period? The answer is no. The intent of the rule is to permit a carryover of only 15 PDH into the subsequent renewal period *regardless* of whether the next renewal period is one year or two years.

Continuing Education Unit

The continuing education unit (CEU) is a nationally recognized and uniform unit of measure for continuing education and training. Since one CEU is awarded for each 10 contact hours of instruction, it logically follows that one CEU is equivalent to 10 PDH. For the purpose of CPC activity for professional engineers and professional land surveyors, the CEU must further meet the requirements as defined below for course/activity.

When a sponsor of CPC qualifying activities fully follows the requirements of the International Association for Continuing Education and Training (IACET) in awarding CEUs, all requirements for PDH will be met. However, boards and licensees should be aware that some organizations may advertise CEU credit without having met all the requirements of the IACET. In addition, it is reported that on occasion, some organizations report one CEU of credit for each contact hour of instruction. If this is known to be the case, action should be taken to prevent over-reporting of PDH units earned.

College/Unit Semester/Quarter Hour Credit for ABET-approved courses

The allowance for college/university qualifying courses is as follows:

One college/university qualifying semester hour.....45 PDH
One college/university qualifying quarter hour.....30 PDH

To qualify for this credit, a course must be offered regularly and *testing with a passing grade* required. One semester hour generally consists of 15 class meetings of 50 or 55 minutes duration. It is assumed that generally twice as much study time is required as class contact time, thus equating to 45 PDH. Similarly, a quarter-hour qualifying course meets 10 times, and thus 30 PDH are allowed. Monitoring courses does not require testing, and thus only the actual class contact hours are allowed.

It should be noted that these college/university courses require accreditation by the Accreditation Board for Engineering and Technology (ABET) or other appropriate accreditation for non-technical courses.

On occasion, educational institutions may offer a one-day seminar and award fractional quarter-hour credit (such as half of a quarter hour). These courses *do not* qualify on the quarter-hour basis since they are not part of the regular curriculum of the educational institution, do not require testing, and have no provision for additional out-of-class study requirements. For courses such as this, only actual contact time should be allowed for PDH credit.

Other Courses and CPC Activities

Other *qualifying* courses, seminars, corporate-sponsored educational activities, programs, and activities as specified in the *Model Rules*, Section 14D, provide one PDH of credit for each contact hour. It is not intended that these courses/activities be undertaken in private, such as a videotaped program in one's home, but rather be conducted in a group. A correspondence course should require the participant to show evidence of achievement and completion and/or a final graded test.

Teaching Credits

Teaching of qualifying courses, seminars, or tutorials earns PDH credits for the instructor at twice that of the students. However, it is not intended that repetitive teaching of the same course will earn any credit. PDH credit does not apply for teaching if the licensee is a full-time faculty member.

Credit for a Published Paper, Article, or Book

The author must have his/her work actually published before credit can be claimed. A published paper must be a serious effort to qualify. For example a "news" article in a technical or professional or technical bulletin is not considered a published paper. It is recognized that often many more hours are spent in being an author of a publication; however, the PDH credit is established at a fixed 10 PDH.

Active Participation in Professional and Technical Societies

This item in the rule is intended to encourage licensees to participate fully in appropriate technical and professional societies. Contact with one's peers at such meetings is considered one way of staying abreast of current topics, issues, technical developments, ethical situations, and learning opportunities. This is considered a vital part of CPC, and thus two PDH of credit can be earned *per organization* if the licensee is an officer or committee member who actively participates within the organization or committee. (Credit of four PDH in one organization cannot be claimed if a licensee is both an officer and a committee member.) The technical and professional societies include engineering and land surveying societies such as AIChE, ASCE, ASME, IEEE, NSPE, NSPS, but do not include civic or trade organizations.

Section 14 E2 in the *Model Rules* states, "Credit for qualifying seminars and workshops will be based on one PDH unit for each hour of attendance. Attendance at qualifying programs presented at professional and/or technical society meeting will earn PDH units for the actual time of each program." This provision applies to all licensees, not just to officers or committee members. Programs must be educational in nature, relevant to the practice of engineering or surveying, and meet all requirements of qualification. Programs at technical or professional societies might be presented on topics that do not qualify or by speakers or presenters who are not well prepared. Such programs should not be claimed for PDH credit.

Patents

Credit for 10 PDH can be claimed after a patent is issued and the inventor submits details to the board. The invention must be related to engineering or land surveying professions.

Examples of Qualifying and Nonqualifying Activities

In order to clarify further the definition of qualifying and non-qualifying activities, the following examples are given:

Typical Qualifying Activities

- Completing or attending courses, seminars, instruction, in-house programs, or training of an engineering or land surveying content which relate to the licensee's field of practice
- Attending technical or professional society meetings when an engineering/land surveying topic is presented as a principal part of the program
- Teaching a course for the first time or teaching a course previously taught if substantial time was spent in updating material
- Attending satellite down-link video courses where attendance is verified and program material meets the requirements
- Completing computer software instructional courses which relate to the improvement of one's business or profession
- Completing language courses which relate to the improvement of one's business or profession
- Completing management or ethics courses which relate to the improvement of one's business or profession
- Completing correspondence courses on an engineering/land surveying topic where lessons are prepared and returned for correction and/or grading and where testing at the end of the course is required

Typical Non-qualifying Activities

- Regular employment
- Real estate licensing courses
- Personal, estate, or financial planning
- Self-study
- Personal self-improvement
- Service club meetings or activities
- Equipment demonstrations or trade show displays
- Topics not relevant to engineering or land surveying professions
- Enrollment without attendance at courses, seminars, etc.
- Repetitive attendance or teaching of the same course
- Attending committee meetings or general business meetings of any organization
- Conversational language courses for personal use

The Determination of Qualifying Activities

The question most asked by licensees is, How do I know what is acceptable to the board? Many are looking for assurance that efforts spent will qualify for PDH credit. But with the broad range of opportunities for earning PDH credits, most boards have elected to widely distribute information on the requirement of what is and is not acceptable and leave it up to the licensee to ensure that the activity qualifies. This permits the widest range of opportunity to earn PDH credit.

Some jurisdictions pre-approve courses for land surveyors, but pre-approval for engineers may not be practicable. One jurisdiction approves sponsors of CPC activities and has developed forms that specify conditions that must be met. The sponsor must submit information on an application form and sign an agreement to the requirement by authorized officials. A sample of the form is shown in Appendix C.

Dual Licensees

The requirement of 15 PDH per year (or 30 per biennial) is the *same* for single or dual licensees. In other words, a dual licensee is not required to obtain more than 15 PDH (30 if biennial) because of the dual licensure. However, the rule specifies that a minimum of one third of the required PDH must be earned in *each* profession.

Recordkeeping

As stated in the *Model Rules*, the requirement to maintain adequate records is the responsibility of the licensee. Licensing boards may conduct audits of licensees for verification purposes.

The *Model Rules* states that records required include, but are not limited to:

1. "a log showing the type of activity claimed, sponsoring organization, location, duration, instructor's or speaker's name, and PDH credits earned." This is intended to require specific information on each CPC activity where PDH credit is claimed. For example, simply stating "attending educational activities at ABC Company" is not acceptable. Specific information on *each* activity is required. The log permits the proper completion of the CPC activities form at the time of renewal. (See related information in Section 4.)

2. "attendance verification records in the form of completion certificates, or other documents supporting evidence of attendance." The question arises, Does each activity require attendance verification? The recommended answer is that a good-faith effort should result in most activities having attendance verification. Certainly, those that are of a longer duration (such as over an hour) should have verification. On occasion, it is recognized that short activities, such as a meeting of a technical or professional society, might include a 30-minute speaker and verification was not provided in the meeting. This should be an unlikely exception. The general rule is that the licensee must have sufficient verification for credits claimed.

3. "records as maintained by the NCEES' CPC Tracking Program or other similar repositories." Participants taking continuing education courses or other activities can furnish information to the NCEES and have credit for those courses recorded and stored on their behalf. NCEES will also transmit CPC information to state boards upon request of the licensee. There are fees associated with the maintenance and transmittal of a CPC record. Licensees may contact the NCEES for information. There may be other recordkeeping systems available that are acceptable to boards.

附錄 5

CHAPTER 443

EXAMINING BOARD OF ARCHITECTS, LANDSCAPE ARCHITECTS, PROFESSIONAL ENGINEERS, DESIGNERS AND LAND SURVEYORS

443.01 Definitions.
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443.06 Registration requirements for land surveyors.
443.07 Permit requirements: designers of engineering systems.
443.08 Registration requirement: firms, partnerships and corporations.
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443.10 Applications, certificates, rules and roster.
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443.14 Exempt persons.
443.15 Exempt buildings.
443.16 Change of name.
443.17 Seal or stamp; aiding unauthorized practice.
443.18 Penalties; law enforcement.

Cross–reference: See definitions in s. 440.01.

443.01 Definitions. In this chapter, unless the context provides otherwise:

(1) "Architect" means a person who is legally qualified to practice architecture.

(2) "Engineer–in–training" means a person who is a graduate in an engineering curriculum of 4 years or more from a school or college approved by the examining board as of satisfactory standing, or a person who has had 4 years or more of experience in engineering work of a character satisfactory to the examining board; and who, in addition, has successfully passed the examination in the fundamental engineering subjects prior to the completion of the requisite years in engineering work, as provided in s. 443.05, and who has been granted a certificate of record by the examining board stating that the person has successfully passed this portion of the professional examinations.

(3) "Examining board" means the examining board of architects, landscape architects, professional engineers, designers and land surveyors.

(3g) "Landscape architect" means a person who practices landscape architecture.

(3r) "Landscape architecture" means the performance of a professional service involving conceptual land planning and conceptual design for integrated land development based on the analysis of environmental characteristics, operational requirements, land use or commensurate land values. "Landscape architecture" includes the investigation, selection or allocation of land or water resources for appropriate uses; the formulation of graphic or written criteria for a land planning or land construction program; the preparation, review or analysis of a master plan for land use or development; the production of a graphic land area, grading, drainage, irrigation, planting or land construction plan; and the planning of a road, bridge or other structure with respect to the aesthetic requirements of the area on which it will be constructed.

(4) "Land surveying" means any service comprising the determination of the location of land boundaries and land boundary corners; the preparation of maps showing the shape and area of tracts of land and their subdivisions into smaller tracts; the preparation of maps showing the layout of roads, streets and rights–of–way of same to give access to smaller tracts; and the preparation of official plats, or maps, of land in this state.

(5) "Practice of architecture" includes any professional service, such as consultation, investigation, evaluation, planning, architectural and structural design, or responsible supervision of construction, in connection with the construction of any private or public buildings, structures, projects, or the equipment thereof, or addition to or alterations thereof, in which the public welfare or the safeguarding of life, health or property is concerned or involved.

(6) "Practice of professional engineering" includes any professional service requiring the application of engineering principles and data, in which the public welfare or the safeguarding of life, health or property is concerned and involved, such as consultation, investigation, evaluation, planning, design, or responsible supervision of construction, alteration, or operation, in connection with any public or private utilities, structures, projects, bridges, plants and buildings, machines, equipment, processes and works. A person offers to practice professional engineering if the person by verbal claim, sign, advertisement, letterhead, card or in any other way represents himself or herself to be a professional engineer; or who through the use of some other title implies that he or she is a professional engineer; or who holds himself or herself out as able to practice professional engineering.

(7) "Professional engineer" means a person who by reason of his or her knowledge of mathematics, the physical sciences and the principles of engineering, acquired by professional education and practical experience, is qualified to engage in engineering practice as defined in sub. (6).

(8) "Responsible supervision of construction" means a professional service, as distinguished from superintending of construction, and means the performance, or the supervision thereof, of reasonable and ordinary on–site observations to determine that the construction is in substantial compliance with the approved drawings, plans and specifications.

History: 1971 c. 42, 215, 307; 1975 c. 9, 39, 199, 200, 334, 421; 1977 c. 29, 125, 418; 1979 c. 34, 98; 1979 c. 162 s. 38 (7); 1979 c. 167; 1979 c. 221 s. 780; 1979 c. 355; 1983 a. 189 ss. 274, 329 (18); 1993 a. 463, 465, 491; 1997 a. 300.

Duties of county and other land surveyors and minimum standards for property surveys discussed. 69 Atty. Gen. 160.

443.02 Practice requirements and registration: general provisions. (1) Any person practicing or offering to practice architecture or professional engineering in this state shall comply with this chapter.

(2) No person may practice architecture or professional engineering in this state unless the person has been duly registered, is exempt under s. 443.14 or has in effect a permit under s. 443.10 (1) (d).

(3) No person may offer to practice architecture or professional engineering or use in connection with the person's name or otherwise assume, use or advertise any title or description tending to convey the impression that he or she is an architect or professional engineer or advertise to furnish architectural or professional engineering services unless the person has been duly registered or has in effect a permit under s. 443.10 **(1)** (d).

(4) No person may practice land surveying in this state or use or advertise any title or description tending to convey the impression that the person is a land surveyor unless the person has been issued a certificate of registration or granted a permit to practice under this chapter.

(5) No person may use the title "landscape architect" unless the person is registered as a landscape architect under this chapter, has in effect a permit under s. 443.10 (1) (d) or is exempt under s. 443.14.

History: 1971 c. 164 s. 88; 1971 c. 215; 1975 c. 39; 1977 c. 29, 418; 1979 c. 34, 167, 355; 1993 a. 463, 465; 1997 a. 300; 1999 a. 85.

443.03 Registration requirements for architects. **(1)** An applicant for registration as an architect shall submit satisfactory evidence to the examining board:

(a) That he or she has acquired a thorough knowledge of sound construction, building hygiene, architectural design and mathematics; and

(b) 1. A diploma of graduation, or a certificate, from an architectural school or college approved by the examining board as of satisfactory standing, together with at least 2 years' practical experience of a character satisfactory to the examining board in the design and construction of buildings; or

2. A specific record of 7 or more years of experience in architectural work of a character satisfactory to the examining board in the design and construction of buildings.

(2) Graduation in architecture from a school or college approved by the examining board as of satisfactory standing shall be considered as equivalent to 5 years of experience, and the completion satisfactory to the examining board of each year of work in architecture in such school or college without graduation shall be considered equivalent to one year of experience. Graduation in a course other than architecture from a school or college approved by the examining board as of satisfactory standing shall be considered as equivalent to not more than 4 years of experience.

History: 1979 c. 167.

443.035 Registration requirements for landscape architects. The examining board shall register as a landscape architect an individual who does all of the following:

(1) Submits to the department evidence satisfactory to the examining board of any of the following:

(a) That he or she has a bachelor's degree in landscape architecture, or a master's degree in landscape architecture, from a curriculum approved by the examining board and has at least 2 years of practical experience in landscape architecture of a character satisfactory to the examining board.

(b) That he or she has a specific record of at least 7 years of training and experience in the practice of landscape architecture including at least 2 years of courses in landscape architecture approved by the examining board, and 4 years of practical experience in landscape architecture of a character satisfactory to the examining board.

(2) Satisfies the applicable requirements under s. 443.09.

History: 1993 a. 465.

443.04 Registration requirements for professional engineers. **(1)** An applicant for registration as a professional engineer shall submit satisfactory evidence to the examining board of one of the following:

(a) A diploma of graduation, or a certificate, from an engineering school or college approved by the examining board as of satisfactory standing in an engineering course of not less than 4 years, together with an additional 4 years of experience in engineering work of a character satisfactory to the examining board and indicating that the applicant is competent to be placed in responsible charge of engineering work.

(b) A specific record of 8 or more years of experience in engineering work of a character satisfactory to the examining board and indicating that the applicant is competent to be placed in responsible charge of engineering work.

(c) A specific record by an applicant of 12 years or more of experience in engineering work of a character satisfactory to the examining board and indicating that the applicant is competent to practice engineering.

(d) A diploma of graduation or a certificate from an engineering school or college approved by the examining board as of satisfactory standing in an engineering course of not less than 4 years, together with an additional 8 years of experience in engineering work of a character satisfactory to the examining board and indicating that the applicant is competent to practice engineering.

(2) Graduation in engineering from a school or college approved by the examining board as of satisfactory standing shall be considered as equivalent to 4 years of experience, and the completion satisfactory to the examining board of each year of work in engineering in such school or college without graduation shall be considered as equivalent to one year of experience. Graduation in a course other than engineering from a school or college approved by the examining board as of satisfactory standing shall be considered as equivalent to 2 years of experience. No applicant may receive credit for more than 4 years of experience under this subsection.

History: 1979 c. 167; 1983 a. 328; 1999 a. 85.

Authority of examining board discussed. 70 Atty. Gen. 156.

443.05 Certification of engineers–in–training. **(1)** An applicant for certification as an engineer–in–training shall submit satisfactory evidence to the examining board as follows:

(a) A diploma of graduation in engineering or a certificate in engineering from a school or college approved by the examining board as of satisfactory standing, or

(b) A specific record of 4 years or more of experience in engineering work of a character satisfactory to the examining board.

(2) Graduation in engineering from a school or college approved by the examining board as of satisfactory standing shall be considered as equivalent to 4 years of experience and the completion satisfactory to the examining board of each year of work in engineering in such school or college without graduation shall be considered as equivalent to one year of experience. Graduation in a course other than engineering from a school or college approved by the examining board as of satisfactory standing shall be considered as equivalent to 2 years of experience. No applicant may receive credit for more than 4 years of experience under this subsection.

History: 1979 c. 167.

443.06 Registration requirements for land surveyors. **(1)** REGISTRATION, APPLICATION, QUALIFYING EXPERIENCE. (a) Application for registration as a land surveyor or a permit to practice shall be made to the section under oath, on forms provided by the department, which shall require the applicant to submit such information as the section deems necessary. The section may require applicants to pass written or oral examinations or both. Applicants who do not have an arrest or conviction record, subject to ss. 111.321, 111.322 and 111.335, shall be entitled to be registered or issued a permit to practice as land surveyors when satisfactory evidence is submitted that the applicant has met one or more of the requirements of sub. (2).

(b) Each year, but not more than 4 years, of work or training completed in a curriculum in land surveying approved by the land surveyor section, or responsible charge of land surveying teaching may be considered as equivalent to one year of qualifying experience in land surveying work, and each year, but not more than 4 years, completed in a curriculum other than land surveying approved by the land surveyor section, may be considered as equivalent to one–half year of qualifying experience.

(2) REQUIREMENTS; CERTIFICATE OF REGISTRATION. The section may grant a certificate of registration as a land surveyor to any person who has submitted to it an application, the required fees and one or more of the following:

(a) A record of completion of a course in land surveying of not less than 2 years' duration approved by the land surveyor section together with 2 years of practice in land surveying work of satisfactory character which indicates that the applicant is competent to be placed in responsible charge of such work, if the applicant has passed an oral and written or written examination administered by the land surveyor section. This paragraph applies to actions of the land surveyor section on applications for land surveyors' certificates that are submitted to the land surveyor section before July 1, 2000.

(am) Evidence satisfactory to the land surveyor section that he or she has received a bachelor's degree in a course in land surveying or a related field that has a duration of not less than 4 years and is approved by the land surveyor section, and that he or she has engaged in at least 2 years of land surveying practice of satisfactory character that indicates that the applicant is competent to practice land surveying, if the applicant has passed an oral and written or written examination administered by the land surveyor section. This paragraph applies to actions of the land surveyor section on applications for land surveyors' certificates that are submitted to the land surveyor section after June 30, 2000.

(b) A record of 6 years of practice in land surveying of satisfactory character, which indicates that the applicant is competent to be placed in responsible charge of such work, if the applicant has passed an oral and written or written examination administered by the land surveyor section. This paragraph applies to actions of the land surveyor section on applications for land surveyors' certificates that are submitted to the land surveyor section before July 1, 2000.

(bm) Evidence satisfactory to the land surveyor section that he or she has received an associate degree in a course in land surveying or a related field that has a duration of not less than 2 years and is approved by the land surveyor section, and that he or she has engaged in at least 4 years of land surveying practice of satisfactory character that indicates that the applicant is competent to practice land surveying, if the applicant has passed an oral and written or written examination administered by the land surveyor section. This paragraph applies to actions of the land surveyor section on applications for land surveyors' certificates that are submitted to the land surveyor section after June 30, 2000.

(c) A record of 20 years of practice in land surveying of satisfactory character, which indicates that the applicant is competent to be placed in responsible charge of such work, if the applicant is not less than 45 years of age and has passed an oral and written or written examination administered by the land surveyor section. This paragraph applies to actions of the land surveyor section on applications for land surveyors' certificates that are submitted to the land surveyor section before January 1, 1995.

(cm) Evidence satisfactory to the land surveyor section that he or she has engaged in at least 10 years of land surveying practice of satisfactory character that indicates that the applicant is competent to practice land surveying, if the applicant has passed an oral and written or written examination administered by the land surveyor section. This paragraph applies to actions of the land surveyor section on applications for land surveyors' certificates that are submitted to the land surveyor section after June 30, 2000.

(d) An unexpired certificate of registration as a land surveyor issued to the applicant by the proper authority in any state or territory or possession of the United States or in any other country whose requirements meet or exceed the requirement for registration in this subsection, if the applicant has passed an oral and written or written examination administered by the land surveyor section.

(e) A record of satisfactory completion of an apprenticeship training course in land surveying prescribed by the department of workforce development, of satisfactory character which indicates that the applicant is competent to be placed in responsible charge of such work, if the applicant has passed an oral and written or written examination administered by the land surveyor section. This paragraph applies to actions of the land surveyor section on applications for land surveyors' certificates that are submitted to the land surveyor section before July 1, 2000.

(em) Evidence satisfactory to the land surveyor section that he or she has completed an apprenticeship training course in land surveying prescribed by the department of workforce development, and has engaged in a period of additional land surveying practice of satisfactory character that indicates that the applicant is competent to practice land surveying and that, when added to the period of the apprenticeship, totals at least 8 years of land surveying practice, if the applicant has passed an oral and written or written examination administered by the land surveyor section. This paragraph applies to actions of the land surveyor section on applications for land surveyors' certificates that are submitted to the land surveyor section after June 30, 2000.

(3) PERMIT TO PRACTICE. The examining board may grant a permit to practice land surveying during the time an application is pending to a person who is not registered in this state, if the person has submitted an application for registration as a land surveyor and paid the required fee and holds an unexpired certificate which in the opinion of the examining board meets the requirements of sub. (2). The permit shall be revocable by the section at its pleasure.

History: 1979 c. 167; 1981 c. 380; 1981 c. 391 s. 211; 1987 a. 27; 1993 a. 462; 1995 a. 27 s. 9130 (4); 1997 a. 3, 27.

443.07 Permit requirements: designers of engineering systems. (1) An applicant for a permit as a designer shall submit evidence satisfactory to the board indicating that he or she is competent to be in charge of such work as follows:

(a) A specific record of 8 years or more of experience in specialized engineering design work and the satisfactory completion of a written examination in the field or branch, as determined by the board, in which certification is sought; or

(b) A specific record of 12 years of experience by any person at least 35 years of age who was actively engaged in this state in the preparation of plans, specifications, designs and layouts in specific fields or branches as designated under sub. (3). Such a person may be granted a permit to offer and perform services in the designated field or branch.

(2) Completion of technological academic training or apprenticeship program approved by the board may be considered equivalent to experience, but should not exceed a total of 4 years. The successful completion of each year of academic work without graduation shall be equivalent to one year of experience. Graduation from a course other than engineering technology shall be equivalent to 2 years of experience under this subsection.

(3) Permits shall be granted, designated and limited to the fields and subfields of technology as are determined by the examining board and recognized in engineering design practice. Any person holding a permit may prepare plans and specifications and perform consultation, investigation and evaluation in connection with the making of plans and specifications, within the scope of the permit, notwithstanding that such activity constitutes the practice of architecture or professional engineering under this chapter.

(4) A master plumber's license under ch. 145 shall be considered equivalent to the work experience and satisfactory completion of a written examination in the field of plumbing systems, and the holder of a master plumber's license shall be issued a permit as a designer of plumbing systems upon the making of an application and the payment of the permit fee.

(5) The permit shall, on its face, restrict the holder thereof to the specific field and subfields of designing in which the permittee acquired his or her experience in designing. If qualified in more

than one type of designing, persons may receive permits for more than one field or subfield of designing as may be determined by the examining board.

(6) The renewal date and renewal fee for permits under this section are specified under s. 440.08 (2) (a).

History: 1979 c. 167; 1991 a. 39.

Although designer of plumbing systems permits must be issued to applicants who are licensed master plumbers, the examining board has wide discretion to establish design of engineering systems classifications in fields and subfields of technology recognized in engineering design practice and to determine the competence of applicants who hold restricted or temporary master plumber's licenses. 60 Atty. Gen. 37.

443.08 Registration requirement: firms, partnerships and corporations. (1) The practice of architecture or professional engineering pertaining to the internal operations of a firm, partnership or corporation may be performed by employees if the architectural or professional engineering services are performed by or under the direct supervision of architects or professional engineers registered under this chapter, or persons exempt from registration under s. 443.14. Registered or exempt architectural or professional engineering employees may provide architectural or professional engineering data with respect to the manufacture, sale and utilization of the products of the firm, partnership or corporation to other registered or exempt architects or professional engineers.

(2) The practice of or the offer to practice architecture, professional engineering or designing by individual architects, professional engineers or designers registered or granted a permit under this chapter, through a firm, partnership or corporation as principals, officers, employees or agents, is permitted subject to this chapter, if all personnel who practice or offer to practice in its behalf as architects, professional engineers or designers are registered or granted a permit under this chapter and if the firm, partnership or corporation has been issued a certificate of authorization under sub. (3).

(3) (a) A firm, partnership or corporation desiring a certificate of authorization shall submit an application to the department on forms provided by the department, listing the names and addresses of all officers and directors, and all individuals in its employment registered or granted a permit to practice architecture, professional engineering or designing in this state who will be in responsible charge of architecture, professional engineering or designing being practiced in this state through the firm, partnership or corporation and other relevant information required by the examining board. A similar type of form shall also accompany the renewal fee. If there is a change in any of these persons, the change shall be reported on the same type of form, and filed with the department within 30 days after the effective date of the change. The examining board shall grant a certificate of authorization to a firm, partnership or corporation complying with this subsection upon payment of the fee specified in s. 440.05 (1). This subsection does not apply to firms, partnerships or corporations exempt under s. 443.14 (3) or (5).

(b) The renewal date and renewal fee for certificates of authorization under this section are specified under s. 440.08 (2) (a).

(4) (a) No firm, partnership or corporation may be relieved of responsibility for the conduct or acts of its agents, employees or officers by reason of its compliance with this chapter, nor may any individual practicing architecture, landscape architecture, professional engineering or designing be relieved of responsibility for architectural, landscape architectural, professional engineering or designing services performed by reason of his or her employment or relationship with the firm, partnership or corporation.

(b) All final drawings, specifications, plans, reports or other architectural, engineering or designing papers or documents involving the practice of architecture, professional engineering or designing, or landscape architectural papers or documents prepared by a landscape architect registered under this chapter, prepared for the use of a firm, partnership or corporation, for delivery by it to any person or for public record within the state shall be dated and bear the signature and seal of the architect, landscape architect, professional engineer or designer who was in responsible charge of their preparation. This paragraph does not apply to persons exempt under s. 443.14 (3), (4) or (5).

(5) No firm, partnership or corporation may engage in the practice of or offer to practice architecture, professional engineering or designing in this state, or use in connection with its name or otherwise assume, use or advertise any title or description tending to convey the impression that it is engaged in the practice of architecture, professional engineering or designing, nor may it advertise or offer to furnish an architectural, professional engineering or designing service, unless the firm, partnership or corporation has complied with this chapter.

(6) Any firm, partnership or corporation using the word "engineering" or any of its derivatives in its name prior to April 24, 1964, shall be permitted to continue to do so and shall be permitted to use such word in any new firm, partnership or corporation formed as a result of a reorganization of the firm, partnership or corporation, if the firm, partnership or corporation does not practice or offer to practice architecture, professional engineering or designing unless it complies with all other applicable provisions of this chapter.

History: 1979 c. 167; 1983 a. 129; 1987 a. 27; 1991 a. 39; 1993 a. 463, 465, 491; 1997 a. 300.

Whether use of "engineer" or "engineering" in business title violates this chapter depends on case–by–case analysis. 70 Atty. Gen. 131.

443.09 Examinations and experience requirements for architect, landscape architect and engineer applicants. (1) In considering the qualifications of an applicant as an architect, landscape architect or professional engineer, responsible charge of architectural, landscape architectural or engineering teaching may be construed as experience.

(2) Subject to ss. 111.321, 111.322 and 111.335, no person who has an arrest or conviction record is eligible for registration as an architect, a landscape architect or a professional engineer, or certification as an engineer–in–training

(3) Written examinations shall be required of every applicant for certification as engineer–in–training.

(4) Written or written and oral examinations shall be required of every applicant for registration as an architect or a professional engineer except an applicant who satisfies s. 443.04 (1) (d). Except as provided in sub. (5), only one form of examination may be required for all applicants. The examination shall be reasonably related to the skills likely to be needed by an applicant practicing the profession at the time of examination and seek to determine the applicant's preparedness to exercise such skills. Failure to pass an examination under this section or under any order of the examining board shall not be a bar to registration under s. 443.04 (1) (d).

(4m) No person may be registered as a landscape architect under this chapter unless he or she passes a written examination or written and oral examinations conducted or approved by the examining board under sub. (5).

(5) Written or written and oral examinations shall be held at such time and place as the examining board determines. The scope of the examinations and the methods of procedure shall be prescribed by the examining board with special reference to the applicant's ability to design and supervise architectural, landscape architectural or engineering work, which shall promote the public welfare and ensure the safety of life, health and property. The architect and professional engineering examination or examinations shall include questions which require applicants to demonstrate knowledge of the design needs of people with physical disabilities and of the relevant statutes and codes. Such questions shall be developed by the examining board in consultation with the department of commerce. The examination for candidates under s. 443.04 (1) (c) shall be the principles and practice examination which requires the applicant to demonstrate the ability to apply engineering principles and judgment to problems in general engineering disciplines and to demonstrate knowledge of

the design needs of people with physical disabilities and the relevant statutes, rules and regulations. A candidate failing an examination may, upon application and payment of the required reexamination fee, be examined again by the examining board. No restrictions may be placed on the number of times an unsuccessful candidate may be reexamined, except that after failure of 3 reexaminations, the examining board may require a one–year waiting period before further reexamination.

(6) The examination papers of each applicant shall be retained by the examining board and shall be available to the applicant for review for a one–year period from the date of the examination. The applicant may make a written request, within the one–year period, for a review by the section, of all or of any part of the examination failed. The section shall review the examination, or any part of the examination within 90 days, following receipt of a written request, and shall furnish the applicant a written reply of the results of the review, including a statement of the reasons for a failing grade.

History: 1979 c. 167; 1981 c. 380; 1981 c. 391 s. 211; 1983 a. 328; 1993 a. 463, 465, 491; 1995 a. 27 ss. 6606, 9116 (5); 1997 a. 300.

443.10 Applications, certificates, rules and roster. **(1)** CERTIFICATE OF REGISTRATION OR RECORD; PERMIT; RECIPROCITY PROVISIONS. (a) The examining board may, upon application and the payment of the required fee, grant a certificate of registration as an architect, as a landscape architect or as a professional engineer to any person who holds an unexpired certificate of similar registration issued to the person by the proper authority in any state or territory or possession of the United States or in any country in which the requirements for the registration of architects, landscape architects or professional engineers are of a standard not lower than specified in this chapter.

(b) The examining board may, upon application and payment of the required fee, grant a certificate of registration as an architect, as a landscape architect or as a professional engineer to any person who holds an unrevoked card or certificate of national reciprocal registration, issued by any state, territory or possession of the United States or by any country, which is in conformity with the regulations of the national council of state board of architectural, or engineering examiners, or council of landscape architectural registration boards, and who complies with the regulations of the examining board, except as to qualifications and registration fee.

(c) The examining board may, upon application therefor, and the payment of the required fee, grant a certificate–of–record as engineer–in–training to any person who holds an unexpired certificate of similar certification issued to the person by the proper authority in any state or territory or possession of the United States or in any country in which the requirements for the certification of engineers–in–training are of a standard not lower than specified in this chapter.

(d) The examining board may, upon application and payment of the required fee, grant a permit to practice or to offer to practice architecture or professional engineering or to use the title "landscape architect" to a person who is not a resident of and has no established place of business in this state, or who has recently become a resident of this state, if the person holds an unexpired certificate of similar registration issued to the person by the proper authority in any state or territory or possession of the United States or in any country in which the requirements for the registration of architects, landscape architects or professional engineers are of a standard not lower than specified in this chapter.

(2) APPLICATIONS FOR REGISTRATION, FEES, CONTENTS OF CERTIFICATION, EXPIRATION. (a) Applications for registration or for a certificate of record shall be on forms provided by the department and shall contain statements made under oath showing the applicant's education and detail summary of the applicant's technical work and not less than 5 references, of whom 3 or more shall have personal knowledge of the applicant's architectural, landscape architectural or engineering experience in the case of an application for registration or of the applicant's technical education or engineering work in the case of an application for a certificate of record.

(b) The fees for examinations and licenses granted or renewed under this chapter are specified in ss. 440.05 and 440.08.

(c) The examining board shall grant a certificate of registration upon payment of the registration fee to any applicant who, in the opinion of the examining board, has satisfactorily met all the applicable requirements of this chapter. The certificate shall authorize the practice of architecture or professional engineering or the use of the title "landscape architect", as appropriate.

(d) The granting of a certificate of registration by the examining board shall be evidence that the person named in the certificate is entitled to all the rights and privileges of a registered architect, a registered landscape architect or a registered professional engineer under the classification stated on the certificate, while the certificate remains unrevoked or unexpired.

(e) The renewal date and renewal fee for certificates of registration for architects, landscape architects and professional engineers are specified under s. 440.08 (2) (a).

(f) The examining board shall grant a certificate of record as engineer–in–training to any applicant who, in the opinion of the examining board, has satisfactorily met all the requirements of this section pertaining to engineers–in–training.

(g) A certificate of record as engineer–in–training is evidence that the engineer–in–training to whom it is issued has successfully passed the portion of the examinations in the fundamental engineering subjects required of an applicant for registration as a professional engineer.

(h) Certificates of record as engineers–in–training shall expire on July 31st of the 10th year after their issuance unless extended by the examining board. An application for extension shall contain evidence satisfactory to the examining board that the applicant's professional experience has been delayed.

(3) EMERGENCY RULES; LIMITATION. The examining board may not adopt or change, by emergency rule, any requirement for the registration of or issuance of a permit to any applicant under this chapter.

(4) ROSTER; RECORDS. (a) A list, showing the names and addresses of all engineers–in–training certified by the examining board during the period from July 1 to June 30, shall be prepared each year by the examining board. The list shall be obtainable by purchase at cost.

(b) The examining board shall keep a record of its proceedings together with a record of all other information pertaining to its proceedings as may be deemed necessary by the board. The records of the examining board shall be prima facie evidence of the proceedings of the examining board set forth in the records, and a transcript thereof, duly certified by the secretary of the examining board under seal, shall be admissible in evidence with the same effect as if the original were produced.

(5) FEES; RENEWALS. The land surveyor's section shall grant a certificate of registration as a land surveyor to any applicant who has met the applicable requirements of this chapter. The renewal date and renewal fee for the certificate are specified under s. 440.08 (2) (a).

(6) ROSTER. A roster showing the names and mailing addresses of all registered surveyors shall be prepared annually by the secretary and made available for purchase at cost, and a copy shall be placed on file with the department of financial institutions.

History: 1979 c. 167 ss. 9, 10, 23, 24, 41, 42, 53; 1979 c. 221 s. 780; 1979 c. 355; 1981 c. 3; 1987 a. 27; 1991 a. 39; 1993 a. 463, 465, 491; 1995 a. 27; 1997 a. 27, 300.

Examining board of architects, professional engineers, designers and land surveyors lacks power to adopt rule prohibiting competitive bidding on projects by architects, professional engineers, etc. 61 Atty. Gen. 369.

443.11 Disciplinary proceedings against architects, landscape architects and engineers. **(1)** The examining board may reprimand an architect, registered landscape architect

or professional engineer or limit, suspend or revoke the certificate of registration of any registrant, and the certificate of record of any engineer–in–training, who is found guilty of:

(a) Fraud or deceit in obtaining a certificate of registration or a certificate of record.

(b) Signing or impressing his or her seal or stamp upon documents not prepared by him or her or under his or her control or knowingly permitting his or her seal or stamp to be used by any other person.

(c) Knowingly aiding or abetting the unauthorized practice of architecture or professional engineering by persons not registered under this chapter.

(d) Any gross negligence, incompetency or misconduct in the practice of architecture as a registered architect, of landscape architecture as a registered landscape architect or of professional engineering as a registered professional engineer, or in the professional activity of a holder of a certificate of record as engineer–in–training.

(e) Any violation of the rules of professional conduct adopted and promulgated by the examining board.

(f) Conviction of a felony, subject to ss. 111.321, 111.322 and 111.335, or adjudication of mental incompetency by a court of competent jurisdiction, a certified copy of the record of conviction or adjudication of incompetency to be conclusive evidence of such conviction or incompetency.

(2) The examining board may reprimand a firm, partnership or corporation holding a certificate of authorization issued under this chapter or may limit, suspend or revoke such a certificate if any of the agents, employees or officers of the firm, partnership or corporation has committed any act or has been guilty of any conduct which would authorize a reprimand or a limitation, suspension or revocation of the certificate of registration of a registrant or the certificate of record of an engineer–in–training under this chapter, unless the firm, partnership or corporation submits evidence satisfactory to the examining board that the agent, employee or officer is not now practicing or offering to practice architecture or professional engineering in its behalf.

(3) Any person may make charges that any registrant, holder of a certificate of record as engineer–in–training or corporate holder of a certificate of authorization has committed an act for which a reprimand or limitation, suspension or revocation of registration is authorized under sub. (1). Such charges shall be in writing, shall be sworn to by the person making them and shall be submitted to the examining board. The examining board may, on its own motion, make such charges. All charges, unless dismissed by the examining board as unfounded or trivial, shall be heard by the appropriate section of the examining board, subject to the rules promulgated under s. 440.03 (1).

(4) If after a hearing under sub. (3), 3 members of a section of the examining board vote in favor of sustaining charges specified in sub. (3), the examining board shall reprimand or limit, suspend or revoke the certificate of registration of the registered architect, registered landscape architect or registered professional engineer, the certificate of record of the holder of a certificate as engineer–in–training, or the certificate of authorization of a firm, partnership or corporation.

(5) The action of the examining board shall be subject to review in the manner provided in ch. 227.

(6) The examining board, for reasons the appropriate section of the examining board considers sufficient, may reissue a certificate of registration or a certificate of record to any person, or a certificate of authorization to any firm, partnership or corporation, whose certificate has been revoked, except for a certificate revoked under s. 440.12, if 3 members of the section vote in favor of such reissuance. Subject to the rules of the examining board, the examining board may, upon payment of the required fee, issue a new certificate of registration, certificate of record or certificate of authorization, to replace any certificate that is revoked, lost, destroyed or mutilated.

History: 1979 c. 167; 1981 c. 334 s. 25 (1); 1993 a. 463, 465, 491; 1997 a. 237, 300; 1999 a. 32, 186.

Gross negligence, incompetency or misconduct as used in (13) (a) 4 [(1)] discussed. Failure of an engineer to properly design a roof truss would not show incompetence, but the board might find gross negligence. Vivian v. Examining Board of Architects, 61 Wis. 2d 627, 213 N.W.2d 359.

443.12 Disciplinary proceedings against land surveyors. (1) The section may reprimand or limit, suspend or revoke the certificate of registration of any land surveyor for the practice of any fraud or deceit in obtaining the certificate, or any gross negligence, incompetence or misconduct in the practice of land surveying.

(2) Charges of fraud, deceit, gross negligence, incompetence or misconduct may be made against any surveyor by the section or any person. Such charges may be made on information and belief, but shall be in writing, stating the specific acts, be signed by the complainant and be submitted to the examining board. All charges shall be heard according to the rules promulgated under s. 440.03 (1).

(3) If after a hearing 3 members vote in favor of reprimand or limiting, suspending or revoking the certificate of registration of a land surveyor, the section shall notify the surveyor to that effect. The surveyor shall return the certificate to the examining board immediately on receipt of notice of a revocation. The action of the section may be reviewed under ch. 227.

(4) The section, for reasons it deems sufficient, may reinstate a certificate of registration that has been revoked, if 3 members vote in favor of such reinstatement. This subsection does not apply to a certificate of registration that is revoked under s. 440.12.

History: 1979 c. 167, 357; 1997 a. 237.

443.13 Disciplinary proceedings against designers of engineering systems. The examining board may limit, suspend or revoke a permit or reprimand the permittee if the permittee is guilty of fraud or deceit in obtaining the permit, gross negligence, incompetency or misconduct in practice, signing documents not prepared by the permittee or under the permittee's control, knowingly aiding or abetting unauthorized designing of engineering systems as stated in s. 443.07 (3) by persons not granted permits under this chapter or conviction of a felony, subject to ss. 111.321, 111.322 and 111.335, or adjudication of mental incompetency by a court of competent jurisdiction. If, after a hearing conducted under the rules promulgated under s. 440.03 (1) before the designers' section of the examining board, two–thirds of the members of the section vote in favor of sustaining the charges, the examining board shall reprimand the permittee or limit, suspend or revoke the permit. The action of the examining board is subject to review under ch. 227.

History: 1979 c. 167; 1981 c. 334 s. 25 (1).

443.14 Exempt persons. The following persons, while practicing within the scope of their respective exemptions, shall be exempt from this chapter:

(1) An employee of a person holding a certificate of registration in this state who is engaged in the practice of architecture or professional engineering and an employee of a person temporarily exempted from registration, if the practice does not include responsible charge of architecture or professional engineering practice.

(2) Officers and employees of the federal government while engaged within this state in the practice of architecture, landscape architecture or professional engineering for the federal government.

(3) A public service company and its regular employees acting in its behalf where the professional engineering services ren-

dered are in connection with its facilities which are subject to regulation, supervision and control by a commission of this state or of the federal government.

(4) Any person who practices architecture or professional engineering, exclusively as a regular employee of a private company or corporation, by rendering to the company or corporation architectural or professional engineering services in connection with its operations, so long as the person is thus actually and exclusively employed and no longer, if the company or corporation has at least one architect or professional engineer who is registered under this chapter in responsible charge of the company's or corporation's architectural or professional engineering work in this state.

(5) A person engaged in the manufacture of a product or unit, including laboratory research affiliates of the person, where the services performed are the design, assembly, manufacture, sale or installation of that product or unit. "Product or unit" does not include any building.

(6) Notwithstanding any other provision of this chapter, contractors, subcontractors or construction material or equipment suppliers are not required to register under this chapter to perform or undertake those activities which historically and customarily have been performed by them in their respective trades and specialties, including, but not limited to, the preparation and use of drawings, specifications or layouts within a construction firm or in construction operations, superintending of construction, installation and alteration of equipment, cost estimating, consultation with architects, professional engineers or owners concerning materials, equipment, methods and techniques, and investigations or consultation with respect to construction sites, provided all such activities are performed solely with respect to the performance of their work on buildings or with respect to supplies or materials furnished by them for buildings or structures or their appurtenances which are, or which are to be, erected, enlarged or materially altered in accordance with plans and specifications prepared by architects or professional engineers, or by persons exempt under subs. (1) to (5) while practicing within the scope of their exemption.

(7) This chapter does not require manufacturers or their material or equipment suppliers to register under this chapter in order to enable them to perform engineering in the design, assembly, manufacture, sale or installation of their respective products.

(8) The following persons doing surveying work are exempt from the provisions of this chapter:

(a) An employee of a land surveyor registered in this state or authorized to practice under a permit, while working under the supervision of the employer. Such exempt employee shall not be in responsible charge of land surveying.

(b) Officers and employees of the federal government while engaged in land surveying for the federal government.

(c) Employees of this state while engaged in land surveying for the state.

(d) Employees of public utilities regulated by the public service commission in land surveying for such utilities.

(9) A license shall not be required for an owner to survey his or her own land for purposes other than for sale.

(10) Any person employed by a county or this state who is engaged in the planning, design, installation or regulation of land and water conservation activities under ch. 92 or s. 281.65 and who is certified under s. 92.18.

(11) Any land surveyor registered under s. 443.06 who is engaged in the planning, design, installation or regulation of land and water conservation activities under ch. 92 or s. 281.65.

(12m) A well driller, as defined in s. 280.01 (7), who is engaged in well drilling, as defined in s. 280.01 (8).

(13) A professional engineer who, while engaged in the practice of professional engineering in accordance with this chapter, collects, investigates, interprets or evaluates data relating to soil, rock, groundwater, surface water, gases or other earth conditions, or uses that data for analysis, consultation, planning, design or construction.

(14) A person who, while engaged in the practice of professional geology, hydrology or soil science as defined in s. 470.01 (2), (3) or (4), practices professional engineering, if the acts that involve the practice of professional engineering are also part of the practice of professional geology, hydrology or soil science.

History: 1979 c. 167 ss. 5, 21, 40, 48; 1979 c. 355; 1983 a. 189 s. 329 (18); 1991 a. 309; 1993 a. 463, 465, 491; 1995 a. 227; 1997 a. 27, 300.

443.15 Exempt buildings. (1) Nothing in this chapter prevents any person from advertising and performing services, including consultation, investigation, evaluation, in connection with and making plans and specifications for, or supervising the erection, enlargement or alterations of any of the following buildings:

(a) Dwellings for single families, and outbuildings in connection with single–family dwellings, including, but not limited to, barns and private garages.

(b) Apartment buildings used exclusively as the residence of not more than 2 families.

(c) Buildings used exclusively for agricultural purposes.

(d) Temporary buildings or sheds used exclusively for construction purposes, not exceeding 2 stories in height, and not used for living quarters.

(2) Nothing in this chapter prevents any person, firm or corporation from making plans and specifications for or supervising the erection, enlargement or alteration of any new building containing less than 50,000 cubic feet total volume or addition to a building which by reason of such addition results in a building containing less than 50,000 cubic feet total volume or structural alteration to a building containing less than 50,000 cubic feet total volume. Nothing in this chapter prevents any person, firm or corporation from making repairs or interior alterations to buildings which do not affect health or safety.

(3) Any multiple family building having a common roof and party walls shall be deemed a single building for purposes of this section.

(4) This section does not apply to inspection and service work done by employees of insurance rating bureaus, insurance service bureaus, insurance companies or insurance agents.

History: 1979 c. 167.

443.16 Change of name. No person may practice architecture or professional engineering in this state, and no person who is registered as a landscape architect under this chapter may practice landscape architecture in this state, under any other given name or any other surname than that under which the person was originally licensed or registered to practice in this or any other state, in any instance in which the examining board, after a hearing, finds that practicing under the changed name operates to unfairly compete with another practitioner or to mislead the public as to identity or to otherwise result in detriment to the profession or the public. This section does not apply to a change of name resulting from marriage or divorce.

History: 1979 c. 98 s. 1; 1979 c. 167 s. 20; 1979 c. 337 s. 15; 1979 c. 355; 1993 a. 463, 465, 491; 1997 a. 300.

443.17 Seal or stamp; aiding unauthorized practice. No person who is registered under this chapter to practice architecture, landscape architecture or professional engineering may impress his or her seal or stamp upon documents which have not been prepared by the person or under his or her direction and control, knowingly permit his or her seal or stamp to be used by any other person or in any other manner knowingly aid or abet the unauthorized practice of architecture or professional engineering or the unauthorized use of the title "landscape architect" by persons not authorized under this chapter.

History: 1979 c. 167; 1993 a. 463, 465, 491; 1997 a. 300.

443.18 Penalties; law enforcement. (1) UNAUTHORIZED PRACTICE; PENALTY. (a) Any person who practices or offers to practice architecture or professional engineering in this state, or who uses the term "architect" or "professional engineer" as part of the person's business name or title, except as provided in s. 443.08 (6), or in any way represents himself or herself as an architect or a professional engineer unless the person is registered or exempted in accordance with this chapter, or unless the person is the holder of an unexpired permit issued under s. 443.10 (1) (d), or any individual who uses the title "landscape architect" in this state unless the person is registered or exempted in accordance with this chapter, or any person presenting or attempting to use as his or her own the certificate of registration of another, or any person who gives any false or forged evidence of any kind to the examining board or to any member of the examining board in obtaining a certificate of registration, or any person who falsely impersonates any other registrant of like or different name, or any person who attempts to use an expired or revoked certificate of registration, or violates any of the provisions of this section, may be fined not less than $100 nor more than $500 or imprisoned for not more than 3 months or both.

(b) All duly constituted officers of the law of this state or any political subdivision shall enforce this chapter and prosecute any persons violating this chapter.

(2) INJUNCTION. (a) If it appears upon complaint to the examining board by any person, or is known to the examining board that any person who is neither registered nor exempt under this chapter nor the holder of an unexpired permit under s. 443.10 (1) (d) is practicing or offering to practice, or is about to practice or to offer to practice, architecture or professional engineering in this state, or is using the title "landscape architect" in this state, the examining board or the attorney general or the district attorney of the proper county may investigate and may, in addition to any other remedies, bring action in the name and on behalf of this state against any such person to enjoin the person from practicing or offering to practice architecture or professional engineering or from using the title "landscape architect".

(b) If it appears upon complaint or is known to the section that any person who is not authorized is practicing or offering to practice land surveying in this state, the section, the department of justice or the district attorney of the proper county may, in addition to other remedies, bring action in the name and on behalf of the state to enjoin the person from practicing or offering to practice land surveying.

(3) PENALTIES; LAW ENFORCEMENT. Any person who violates this chapter shall be fined not more than $500 or imprisoned not more than 3 months or both.

History: 1979 c. 167 ss. 27, 28, 45, 46; 1981 c. 20; 1993 a. 463, 465, 491; 1997 a. 300; 1995 a. 85.

附錄 6

PROFESSIONAL ENGINEERS ACT
(Business and Professions Code §§ 6700 – 6799)

INCLUDES AMENDMENTS MADE DURING THE 2002 LEGISLATIVE SESSION
(Effective January 1, 2003, unless otherwise noted)

CHAPTER 7. PROFESSIONAL ENGINEERS

Article 1. General Provisions

6700. Professional Engineers Act

This chapter constitutes the chapter on professional engineers. It may be cited as the Professional Engineers Act.

6701. Professional engineer defined

"Professional engineer," within the meaning and intent of this act, refers to a person engaged in the professional practice of rendering service or creative work requiring education, training and experience in engineering sciences and the application of special knowledge of the mathematical, physical and engineering sciences in such professional or creative work as consultation, investigation, evaluation, planning or design of public or private utilities, structures, machines, processes, circuits, buildings, equipment or projects, and supervision of construction for the purpose of securing compliance with specifications and design for any such work.

6702. Civil engineer defined

"Civil engineer" as used in this chapter means a professional engineer in the branch of civil engineering and refers to one who practices or offers to practice civil engineering in any of its phases.

6702.1. Electrical engineer defined

"Electrical engineer" as used in this chapter means a professional engineer in the branch of electrical engineering and refers to one who practices or offers to practice electrical engineering in any of its phases.

6702.2. Mechanical engineer defined

"Mechanical engineer" as used in this chapter means a professional engineer in the branch of mechanical engineering and refers to one who practices or offers to practice mechanical engineering in any of its phases.

6703. Responsible charge of work defined

The phrase "responsible charge of work" means the independent control and direction, by the use of initiative, skill, and independent judgment, of the investigation or design of

professional engineering work or the direct engineering control of such projects. The phrase does not refer to the concept of financial liability.

6703.1. Supervision of construction defined

"Supervision of the construction of engineering structures" means the periodic observation of materials and completed work to determine general compliance with plans, specifications, and design and planning concepts. However, "supervision of construction of engineering structures" does not include responsibility for the superintendence of construction processes, site conditions, operations, equipment, personnel, or the maintenance of a safe place to work or any safety in, on, or about the site.

For purposes of this subdivision, "periodic observation" means visits by an engineer, or his or her agent, to the site of a work of improvement.

6704. Defines who may use engineer titles

In order to safeguard life, health, property, and public welfare, no person shall practice civil, electrical, or mechanical engineering unless appropriately registered or specifically exempted from registration under this chapter, and only persons registered under this chapter shall be entitled to take and use the titles "consulting engineer," "professional engineer," or "registered engineer," or any combination of those titles, and according to registration with the board the engineering branch titles specified in Section 6732, or the authority titles specified in ~~Section 6763~~ Sections 6736 and 6736.1, or "engineer-in-training."

The provisions of this act pertaining to registration of professional engineers other than civil engineers, do not apply to employees in the communication industry; nor to the employees of contractors while engaged in work on communication equipment; however, those employees may not use any of the titles listed in Section 6732 unless registered.

The provisions of this section shall not prevent the use of the title "consulting engineer" by a person who has qualified for and maintained exemption for using that title under the provisions of Section 6732.1, or by a person licensed as a photogrammetric surveyor.

(Stats. 2002, Ch. 1013 (SB 2026).)

6704.1. Title Act Review

(a) The Department of Consumer Affairs, in conjunction with the board, and the Joint Legislative Sunset Review Committee shall review the engineering branch titles specified in Section 6732 to determine whether certain title acts should be eliminated from this chapter, retained, or converted to practice acts similar to civil, electrical, and mechanical engineering, and whether supplemental engineering work should be permitted for all branches of engineering. The department shall contract with an independent consulting firm to perform this comprehensive analysis of title act registration.

(b) The independent consultant shall perform, but not be limited to, the following:

(1) meet with representatives of each of the engineering branches and other professional groups;

(2) examine the type of services and work provided by engineers in all branches of engineering and interrelated professions within the marketplace, to determine the interrelationship that exists between the various branches of engineers and other interrelated professions;

(3) review and analyze educational requirements of engineers;

(4) identify the degree to which supplemental or "overlapping" work between engineering branches and interrelated professions occurs;

(5) review alternative methods of regulation of engineers in other states and what impact the regulations would have if adopted in California;

(6) identify the manner in which local and state agencies utilize regulations and statutes to regulate engineering work; and,

(7) recommend changes to existing laws regulating engineers after considering how these changes may effect the health, safety, and welfare of the public.

(c) The board shall reimburse the department for costs associated with this comprehensive analysis. The department shall report its findings and recommendations to the Legislature by September 1, 2002.

6705. Subordinate defined

A subordinate is any person who assists a registered professional engineer in the practice of professional engineering without assuming responsible charge of work.

6706. Good Samaritan immunity

(a) An engineer who voluntarily, without compensation or expectation of compensation, provides structural inspection services at the scene of a declared national, state, or local emergency ~~caused by a flood, riot, fire, or earthquake~~ at the request of a public official, public safety officer, or city or county building inspector acting in an official capacity shall not be liable in negligence for any personal injury, wrongful death, or property damage caused by the engineer's good faith but negligent inspection of a structure used for human habitation or owned by a public entity for structural integrity or nonstructural elements affecting life and safety.

The immunity provided by this section shall apply only for an inspection that occurs within 30 days of the declared emergency.

Nothing in this section shall provide immunity for gross negligence or willful misconduct.

(b) As used in this section:

(1) "Engineer" means a person registered under this chapter as a professional engineer, including any of the branches thereof.

(2) "Public safety officer" has the meaning given in Section 3301 of the Government Code.

(3) "Public official" means a state or local elected officer.

(Stats. 2002, Ch. 1013 (SB 2026).)

6706.3. References to registered engineer deemed to refer to licensed engineer

Any reference in any law or regulation to a registered engineer, or to a registered civil, electrical, or mechanical engineer, is deemed to refer to a licensed engineer, or to a licensed civil, electrical, or mechanical engineer, as the case may be.

Article 2. Administration

6710. Board name and composition; reference to previous name; sunset dates

(a) There is in the Department of Consumer Affairs a Board for Professional Engineers and Land Surveyors, which consists of 13 members.

(b) Any reference in any law or regulation to the Board of Registration for Professional Engineers and Land Surveyors is deemed to refer to the Board for Professional Engineers and Land Surveyors.

(c) This section shall become inoperative on July 1, ~~2004~~ 2005, and, as of January 1, ~~2005~~ 2006, is repealed, unless a later enacted statute, that becomes effective on or before January 1, ~~2005~~ 2006, deletes or extends the dates on which it becomes inoperative and is repealed. The repeal of this section renders the board subject to the review required by Division 1.2 (commencing with Section 473). ~~However, the review of the board shall be limited to only those unresolved issues identified by the Joint Legislative Sunset Review Committee.~~

(Stats. 2002, Ch. 1150 (SB 1955).)

6710.1 Legislative Intent – Protection of the Public

Protection of the public shall be the highest priority for the Board for Professional Engineers and Land Surveyors in exercising its licensing, regulatory, and disciplinary functions. Whenever protection of the public is inconsistent with other interests sought to be promoted, the protection of the public shall be paramount.

(Stats. 2002, Ch. 107 (AB 269).)

6711. Qualifications of board members

Each member of the board shall be a citizen of the United States. Five members shall be registered under this chapter. One member shall be licensed under the Land Surveyors' Act, Chapter 15 (commencing with Section 8700) of this division, and seven shall be public members who are not registered under this act or licensed under the Land Surveyors' Act. Each member, except the public members, shall have at least 12 years active experience and shall be of good standing in his profession. Each member shall be at least 30 years of age, and shall have been a resident of this state for at least five years immediately proceeding his appointment.

6712. Appointments; term; qualifications

All appointments to the board shall be for a term of four years. Vacancies shall be filled by appointment for the unexpired term. Each appointment thereafter shall be for a four-year term expiring on June 1 of the fourth year following the year in which the previous term expired.

Each member shall hold office until the appointment and qualification of his or her successor or until one year shall have elapsed since the expiration of the term for which he or she was appointed, whichever first occurs. No person shall serve as a member of the board for more than two consecutive terms.

The Governor shall appoint professional members so that one is licensed to practice engineering as a civil engineer, one as an electrical engineer, one as a mechanical engineer, another is authorized to use the title of structural engineer, and one is a member of one of the remaining branches of engineering. One of the professional members registered under this chapter shall be from a local public agency, and one shall be from a state agency.

The Governor shall appoint five of the public members and the professional members qualified as provided in Section 6711. The Senate Rules Committee and the Speaker of the Assembly shall each appoint a public member.

6713. Removal of members

The Governor may remove any member of the board for misconduct, incompetency or neglect of duty.

6714. Appointment of executive officer; salary

The board shall appoint an executive officer at a salary to be fixed and determined by the board with the approval of the Director of Finance.

This section shall become inoperative on July 1, ~~2004~~ 2005, and, as of January 1, ~~2005~~ 2006, is repealed, unless a later enacted statute, that becomes effective on or before January 1, ~~2005~~ 2006, deletes or extends the dates on which it becomes inoperative and is repealed.

(Stats. 2002, Ch. 1150 (SB 1955).)

6715. Roster

The executive officer shall keep a complete record of all applications for registration and the board's action thereon and, once every two years, shall prepare a roster showing the names and addresses of all registered professional engineers, and the names and addresses of the holders of all delinquent certificates of registration and certificates of authority.

Copies shall be available to the general public. The roster shall be a public record.

6716. Rules and regulations; meetings; quorum

(a) The board may adopt rules and regulations consistent with law and necessary to govern its action. These rules and regulations shall be adopted in accordance with the provisions of the Administrative Procedure Act (Chapter 3.5 (commencing with Section 11340) of Part 1 of Division 3 of Title 2 of the Government Code.

(b) The board may adopt rules and regulations of professional conduct that are not inconsistent with state and federal laws. The rules and regulations may include definitions of incompetence and negligence. Every person who holds a license or certificate issued by the board pursuant to this chapter shall be governed by these rules and regulations.

(c) The board shall hold at least two regular meetings each year. Special meetings shall be held at those times that the board rules provide. A majority of the board constitutes a quorum. Except otherwise provided by law, the vote required for any action of the board is a majority of the members present, but not less than five.

6717. Authority to define scope of practice

The board may, by regulation, define the scope of each branch of professional engineering other than civil, electrical, and mechanical engineering for which registration is provided under this chapter.

6718. Oaths and testimony

Any member of the board may administer oaths and may take testimony and proofs concerning all matters within the board's jurisdiction.

6719. Board seal

The board shall adopt and have an official seal which shall be affixed to all certificates of registration.

6720. Per diem; expenses

Each member of the board shall receive a per diem and expenses as provided in Section 103.

6726. Technical Advisory Committee; functions

The board may establish one or more technical advisory committees to advise and assist the board with respect to the following:

(1) Application review and verification for any level of registration, licensure, authority, or title.

(2) Evaluation and investigation of potential violations of the act.

(3) Amendment, repeal, adoption, or revision of board rules, regulations, policies, and procedures.

6726.1. Membership of TAC

Each member of each technical advisory committee shall be appointed by the board and shall serve at the pleasure of the board. Each committee shall be composed of no more than five members.

6726.2. Qualification of members

Except as provided in subdivision (c) of Section 6736.1, each member of each technical advisory committee shall be an expert in the branch of engineering within the committee's jurisdiction and shall be registered under this chapter.

6726.3. Per diem; expenses

All the members of each technical advisory committee shall serve without compensation but shall receive per diem and expenses as provided in Section 103.

6726.4. Immunity from liability

Each member of each technical advisory committee shall be granted the same immunity as is granted to a public employee pursuant to Article 3 (commencing with Section 820) of Chapter 1 of Part 2 of Division 3.6 of Title 1 of the Government Code.

Article 2.3 Professional Engineers Review Committees

6728. Establishment; duration

The board, when it deems necessary, may establish professional engineers review committees to hear all matters assigned by the board, including, but not limited to, any contested case which is assigned by the board. Each committee shall exist so long as the board deems that it is necessary.

6728.1. Members; appointment; qualifications

Each review committee shall consist of no fewer than three registered professional engineers appointed by the board. Each member of a committee shall have the same

qualifications and shall be subject to the same rules and regulations as if he were a member of the board.

6728.2. Per diem and expenses

Each member of a committee shall receive a per diem and expenses as provided in Section 103 of this code.

6728.3. Hearings; conduct; presence of hearing officer

Except as otherwise provided in this article, all hearings which are conducted by a committee shall be conducted in accordance with the provisions of Chapter 4 (commencing with Section 11370), Chapter 4.5 (commencing with Section 11400), and Chapter 5 (commencing with Section 11500), Part 1, Division 3, Title 2 of the Government Code.

If a contested case is heard by a committee, the hearing officer who presided at the hearing shall be present during the committee's consideration of the case and, if requested, shall assist and advise the committee.

(Stats. 2002, Ch. 1013 (SB 2026).)

6728.4. Proposed decisions

At the conclusion of any hearing which is conducted by a committee, the committee shall prepare a proposed decision, in such form that it may be adopted by the board as the decision in the case, and shall transmit it to the board. The proposed decision shall be subject to the same procedure as the proposed decision of a hearing officer under subdivisions (b) and (c) of Section 11517 of the Government Code.

6728.5. Authority for rules and regulations

The board may adopt, amend or repeal, in accordance with the provisions of Chapter ~~4.5~~ 3.5 (commencing with Section ~~11371~~ 11340), Part 1, Division 3, Title 2 of the Government Code, such rules and regulations as are necessary to implement these sections.

(Stats. 2002, Ch. 1013 (SB 2026).)

6728.6. Immunity

Each member of a professional engineers review committee or other board-appointed committee and any board-appointed representative of the board shall be granted the same immunity as is granted to a public employee pursuant to Article 3 (commencing with Section 820) of Chapter 1 of Part 2 of Division 3.6 of Title 1 of the Government Code.

Article 3. Application of Chapter

6730. Evidence of qualifications; registration

In order to safeguard life, health, property and public welfare, any person, either in a public or private capacity, except as in this chapter specifically excepted, who practices, or offers to practice, civil engineering, electrical engineering or mechanical engineering, in any of its branches in this state, including any person employed by the State of California, or any city, county, or city and county, who practices engineering, shall submit evidence that he is qualified

to practice, and shall be registered accordingly as a civil engineer, electrical engineer or mechanical engineer by the board.

6730.2. Requirement for responsible charge

It is the intent of the Legislature that the registration requirements that are imposed upon private sector professional engineers and engineering partnerships, firms, or corporations shall be imposed upon the state and any city, county, or city and county that shall adhere to those requirements. Therefore, for the purposes of Section 6730 and this chapter, at least one registered engineer shall be designated the person in responsible charge of professional engineering work for each branch of professional engineering practiced in any department or agency of the state, city, county, or city and county.

Any department or agency of the state or any city, county, or city and county which has an unregistered person in responsible charge of engineering work on January 1, 1985, shall be exempt from this requirement until that time as the person currently in responsible charge is replaced.

6731. Civil engineering defined

Civil engineering embraces the following studies or activities in connection with fixed works for irrigation, drainage, waterpower, water supply, flood control, inland waterways, harbors, municipal improvements, railroads, highways, tunnels, airports and airways, purification of water, sewerage, refuse disposal, foundations, grading, framed and homogeneous structures, buildings, or bridges:

(a) The economics of, the use and design of, materials of construction and the determination of their physical qualities.

(b) The supervision of the construction of engineering structures.

(c) The investigation of the laws, phenomena and forces of nature.

(d) Appraisals or valuations.

(e) The preparation or submission of designs, plans and specifications and engineering reports.

(f) Coordination of the work of professional, technical, or special consultants.

(g) Creation, preparation, or modification of electronic or computerized data in the performance of the activities described in subdivisions (a) through (f).

Civil engineering also includes city and regional planning insofar as any of the above features are concerned therein.

Civil engineers registered prior to January 1, 1982, shall be authorized to practice all land surveying as defined in Chapter 15 (commencing with Section 8700) of Division 3.

[NOTE: The last registration number issued to a civil engineer registered before January 1, 1982 was 33,965.]

6731.1. Civil engineering; additional authority

Civil engineering also includes the practice or offer to practice, either in a public or private capacity, all of the following:

(a) Locates, relocates, establishes, reestablishes, or retraces the alignment or elevation for any of the fixed works embraced within the practice of civil engineering, as described in Section 6731.

(b) Determines the configuration or contour of the earth's surface or the position of fixed objects thereon or related thereto, by means of measuring lines and angles, and applying the principles of trigonometry or photogrammetry.

(c) Creates, prepares, or modifies electronic or computerized data in the performance of the activities described in subdivisions (a) and (b).

6731.2. Authority to offer to practice or procure land surveying

Any registered civil engineer may offer to practice, procure, and offer to procure, land surveying work incidental to his or her civil engineering practice, even though he or she is not authorized to perform that work, provided all the land surveying work is performed by, or under the direction of, a licensed land surveyor or registered civil engineer authorized to practice land surveying. Further, any registered civil engineer may manage or conduct as manager, proprietor, or agent, a civil engineering practice which offers to practice, procure, and offers to procure, such incidental land surveying work.

6731.3 Construction project management services

A registered civil engineer may also practice or offer to practice, either in a public or private capacity, construction project management services, including, but not limited to, construction project design review and evaluation, construction mobilization and supervision, bid evaluation, project scheduling, cost-benefit analysis, claims review and negotiation, and general management and administration of a construction project.

6731.4 Responsibility for construction management services

If a registered civil engineer provides construction management services pursuant to Section 6731.3, Section 6703.1 shall not limit the responsibility of the engineer for the services actually provided.

6731.5. Electrical engineering defined

(a) Electrical engineering is that branch of professional engineering described in Section 6734.1 that embraces studies or activities relating to the generation, transmission, and utilization of electrical energy, including the design of electrical, electronic, and magnetic circuits, and the technical control of their operation and of the design of electrical gear. It is concerned with the research, organizational, and economic aspects of the above.

(b) The design of electronic and magnetic circuits is not exclusive to the practice of electrical engineering, as defined in subdivision (a).

6731.6. Mechanical engineering defined

Mechanical engineering is that branch of professional engineering described in Section 6734.2 that deals with engineering problems relating to generation, transmission, and utilization of energy in the thermal or mechanical form and also with engineering problems relating to the production of tools, machinery, and their products, and to heating, ventilation, refrigeration, and plumbing. It is concerned with the research, design, production, operational, organizational, and economic aspects of the above.

6732. Use of seal, stamp or title by unregistered person

It is unlawful for anyone other than a professional engineer licensed under this chapter to stamp or seal any plans, specifications, plats, reports, or other documents with the seal or stamp of a professional engineer, or to in any manner, use the title "professional engineer," "licensed engineer," "registered engineer," or "consulting engineer," or any of the following branch titles: "agricultural engineer," "chemical engineer," "civil engineer," "control system engineer," "electrical engineer," "fire protection engineer," "industrial engineer," "manufacturing engineer," "mechanical engineer," "metallurgical engineer," "nuclear engineer," "petroleum engineer," or "traffic engineer," or any combination of these words and phrases or abbreviations thereof unless licensed under this chapter.

6732.1. Exemption for use of title "Consulting Engineer"

Any person who has been granted permission to use the title "consulting engineer" pursuant to legislation enacted at the 1963, 1965, or 1968 Regular Session is exempt from the provisions of Section 6732 as it restricts the use of the title "consulting engineer", and such exemption shall apply so long as the applicant remains in practice and advises the board of any change of address within 30 days of such change. The board may adopt such rules under provisions of the Administrative Procedure Act as are necessary to implement this section.

The provisions of Articles 5 (commencing with Section 6775), 6 (commencing with Section 6785), and 7 (commencing with Section 6795) of this chapter shall apply to all persons who are granted permission to use the title "consulting engineer" pursuant to legislation enacted in 1963 and 1965 and the amendments to this section enacted at the 1968 Regular Session.

6732.2 Consulting engineers; practice of photogrammetry

Any person who possesses a valid certificate to practice photogrammetry issued to him under the provisions of Chapter 15 (commencing with Section 8700) of this division may apply for, and be issued, a certificate of authority to use the title "consulting engineer," if all of the following requirements are satisfied:

(a) Application is made on a form provided by the board and is accompanied by the fees prescribed in Section 8805.

(b) Information submitted evidences to the satisfaction of the board that the applicant has had five years of independent control in furnishing consulting photogrammetric, geodetic, or topographic surveying services or consulting surveying services in connection with fixed works as defined in Section 6731.

Authority to use the title "consulting engineer" granted under this section does not affect authorizations made under the several provisions provided in Section 6732.1.

Authority to use the title "consulting engineer" granted under this section shall remain valid only while its holder's basic license is valid, and if it lapses it may be renewed only as provided in Article 7 (commencing with Section 6795).

The provisions of Article 5 (commencing with Section 6775), Article 6 (commencing with Section 6785), and Article 7 (commencing with Section 6795), of this chapter, shall apply to the certificates issued as provided in this section and to the persons so certificated.

6732.3. Continued use of branch titles of corrosion, quality, or safety engineering

(a) Any person who has received from the board a registration or license in corrosion, quality, or safety engineering, and who holds a valid registration or license to practice professional engineering under this chapter, may continue to use the branch title of the branch in

which the professional engineer is legally registered. A person holding a registration in corrosion, quality, or safety engineering is subject to the registration or license renewal provisions of this chapter.

(b) The professional engineer also may continue to use the title of "professional engineer," "licensed engineer," "registered engineer," or "consulting engineer."

6732.4. Examination for registration as corrosion, quality, or safety engineer

Notwithstanding any other provision of law, any person who has applied for registration as a corrosion, quality, or safety engineer, and who has completed the written examination in one or more of these branch titles prior to January 1, 1999, shall be issued registration in the branch title for which the applicant was examined, provided that he or she has met all other qualifications for registration. The board shall not administer any examination for registration as a corrosion, quality, or safety engineer on or after January 1, 1999.

6733. Use of stamp or seal when certificate not in force

It is unlawful for anyone to stamp or seal any plans, specifications, plats, reports, or other documents with the seal after the certificate of the registrant, named thereon, has expired or has been suspended or revoked, unless the certificate has been renewed or reissued.

6734. Practice of civil engineering

Any person practices civil engineering when he professes to be a civil engineer or is in responsible charge of civil engineering work.

6734.1. Practice of electrical engineering

Any person practices electrical engineering when he professes to be an electrical engineer or is in responsible charge of electrical engineering work.

6734.2. Practice of mechanical engineering

Any person practices mechanical engineering when he professes to be a mechanical engineer or is in responsible charge of mechanical engineering work.

6735. Preparation, signing, and sealing of civil engineering documents

(a) All civil (including structural and geotechnical) engineering plans, calculations, specifications, and reports (hereinafter referred to as "documents") shall be prepared by, or under the responsible charge of, a registered civil engineer and shall include his or her name and license number. Interim documents shall include a notation as to the intended purpose of the document, such as "preliminary," "not for construction," "for plan check only," or "for review only." All civil engineering plans and specifications that are permitted or that are to be released for construction shall bear the signature and seal or stamp of the registrant, the date of signing and sealing or stamping, and the expiration date of the certificate or authority. All final civil engineering calculations and reports shall bear the signature and seal or stamp of the registrant, the date of signing and sealing or stamping, and the expiration date of the certificate or authority. If civil engineering plans are required to be signed and sealed or stamped and have multiple sheets, the signature, seal or stamp, date of signing and sealing or stamping, and expiration date of the certificate or authority shall appear on each sheet of the plans. If civil engineering

specifications, calculations, and reports are required to be signed and sealed or stamped and have multiple pages, the signature, seal or stamp, date of signing and sealing or stamping, and expiration date of the certificate or authority shall appear at a minimum on the title sheet, cover sheet, or signature sheet.

(b) Notwithstanding subdivision (a), a registered civil engineer who signs civil engineering documents shall not be responsible for damage caused by subsequent changes to or uses of those documents, if the subsequent changes or uses, including changes or uses made by state or local governmental agencies, are not authorized or approved by the registered engineer who originally signed the documents, provided that the engineering service rendered by the civil engineer who signed the documents was not also a proximate cause of the damage.

6735.1. Construction supervision; legal duty

The signing of civil engineering plans, specifications, reports, or documents which relate to the design of fixed works shall not impose a legal duty or responsibility upon the person signing the plans, specifications, reports, or documents to supervise the construction of engineering structures or the construction of the fixed works which are the subject of the plans, specifications, reports, or documents. However, nothing in this section shall preclude a civil engineer and a client from entering into a contractual agreement which includes a mutually acceptable arrangement for the provision of construction supervision services. Nothing contained in this subdivision shall modify the liability of a civil engineer who undertakes, contractually or otherwise, the provision of construction supervision services for rendering those services.

6735.3. Signing and sealing of electrical engineering documents

(a) All electrical engineering plans, specifications, calculations, and reports (hereinafter referred to as "documents") prepared by, or under the responsible charge of, a registered electrical engineer shall include his or her name and license number. Interim documents shall include a notation as to the intended purpose of the document, such as "preliminary," "not for construction," "for plan check only," or "for review only." All electrical engineering plans and specifications that are permitted or that are to be released for construction shall bear the signature and seal or stamp of the registrant, the date of signing and sealing or stamping, and the expiration date of the registration. All final electrical engineering calculations and reports shall bear the signature and seal or stamp of the registrant, the date of signing and sealing or stamping, and the expiration date of the registration. If electrical engineering plans are required to be signed and sealed or stamped and have multiple sheets, the signature, seal or stamp, date of signing and sealing or stamping, and expiration date of the registration shall appear on each sheet of the plans. If electrical engineering specifications, calculations, and reports are required to be signed and sealed or stamped and have multiple pages, the signature, seal or stamp, date of signing and sealing or stamping, and expiration date of the registration shall appear at a minimum on the title sheet, cover sheet, or signature sheet.

(b) Notwithstanding subdivision (a), a registered electrical engineer who signs electrical engineering documents shall not be responsible for damage caused by subsequent changes to or uses of those documents, if the subsequent changes or uses, including changes or uses made by state or local governmental agencies, are not authorized or approved by the registered engineer who originally signed the documents, provided that the engineering service rendered by the electrical engineer who signed the documents was not also a proximate cause of the damage.

6735.4. Signing and sealing of mechanical engineering documents

(a) All mechanical engineering plans, specifications, calculations, and reports (hereinafter referred to as "documents") prepared by, or under the responsible charge of, a registered mechanical engineer shall include his or her name and license number. Interim documents shall include a notation as to the intended purpose of the document, such as "preliminary," "not for construction," "for plan check only," or "for review only." All mechanical engineering plans and specifications that are permitted or that are to be released for construction shall bear the signature and seal or stamp of the registrant, the date of signing and sealing or stamping, and the expiration date of the registration. All final mechanical engineering calculations and reports shall bear the signature and seal or stamp of the registrant, the date of signing and sealing or stamping, and the expiration date of the registration. If mechanical engineering plans are required to be signed and sealed or stamped and have multiple sheets, the signature, seal or stamp, date of signing and sealing or stamping, and expiration date of the registration shall appear on each sheet of the plans. If mechanical engineering specifications, calculations, and reports are required to be signed and sealed or stamped and have multiple pages, the signature, seal or stamp, date of signing and sealing or stamping, and expiration date of the registration shall appear at a minimum on the title sheet, cover sheet, or signature sheet.

(b) Notwithstanding subdivision (a), a registered mechanical engineer who signs mechanical engineering documents shall not be responsible for damage caused by subsequent changes to or uses of those documents, if the subsequent changes or uses, including changes or uses made by state or local governmental agencies, are not authorized or approved by the registered engineer who originally signed the documents, provided that the engineering service rendered by the mechanical engineer who signed the documents was not also a proximate cause of the damage.

6735.5. Use of word "certify" or "certification"

The use of the word "certify" or "certification" by a registered professional engineer in the practice of professional engineering or land surveying constitutes an expression of professional opinion regarding those facts or findings which are the subject of the certification, and does not constitute a warranty or guarantee, either expressed or implied.

6735.6. Provision of "as built" plans

If a registered civil engineer is required to provide as built, as constructed, or record plans for improvements or grading, which plans show changes during the construction process, the following shall apply:

(a) If the registered civil engineer provided construction phase services on the project that include supervision of the construction of engineering structures, the plans shall be based upon the field observations of the registered civil engineer and his or her agents, and information received from the project owner, project contractors, and public agencies.

(b) If the registered civil engineer did not provide construction phase services on the project that include supervision of the construction of engineering structures, the plans shall be based on information received from the project owner, project contractors, and public agencies, but need not be based upon a field verification or investigation of the improvements or grades, unless the registered civil engineer is engaged to provide such field verification services.

(c) The registered civil engineer shall not be required to include a certificate or statement on as built, as constructed, or record plans that is inconsistent with or varies from the provisions of this section.

6736. Title of structural engineer

No person shall use the title, "structural engineer," unless he is a registered civil engineer in this State and, furthermore, unless he has been found qualified as a structural engineer according to the rules and regulations established therefor by the board.

6736.1. Soil engineer, soils engineer, or geotechnical engineer

(a) On or after July 1, 1984, no person shall use the title, "soil engineer," unless he or she is a registered civil engineer in this state and he or she has been found qualified as a soil engineer according to the rules and regulations established for soil engineers by the board. Any registered civil engineer using the title "soil engineer" on or before July 1, 1984, may, for a period of two years, continue to use the title "soil engineer." On and after July 1, 1986, no person may use the title "soil engineer," "soils engineer," or "geotechnical engineer," unless he or she files an application to use the appropriate title with the board and the board determines the applicant is qualified to use the requested title.

(b) The board shall establish qualifications and standards to use the title "soil engineer," "soils engineer, or "geotechnical engineer." However, each applicant shall demonstrate a minimum of four years qualifying experience beyond that required for registration as a civil engineer, and shall pass the examination specified by the board.

(c) For purposes of this section, "qualifying experience" means proof of responsible charge of soil engineering projects in at least 50 percent of the major areas of soil engineering, as determined by the board.

(d) Nothing contained in this chapter requires existing references to "soil engineering," "soils engineering," "geotechnical engineering," "soil engineer," "soils engineer," or "geotechnical engineer," in local agency ordinances, building codes, regulations, or policies, to mean that those activities or persons must be registered or authorized to use the relevant title or authority.

6737. Architectural exemption

An architect, who holds a certificate to practice architecture in this State under the provisions of Chapter 3 of Division 3 of this code insofar as he practices architecture in its various branches, is exempt from registration under the provisions of this chapter.

6737.1. Structure exemption

(a) This chapter does not prohibit any person from preparing plans, drawings, or specifications for any of the following:

(1) Single-family dwellings of woodframe construction not more than two stories and basement in height.

(2) Multiple dwellings containing no more than four dwelling units of woodframe construction not more than two stories and basement in height. However, this paragraph shall not be construed as allowing an unlicensed person to design multiple clusters of up

to four dwelling units each to form apartment or condominium complexes where the total exceeds four units on any lawfully divided lot.

(3) Garages or other structures appurtenant to buildings described under subdivision (a), of woodframe construction not more than two stories and basement in height.

(4) Agricultural and ranch buildings of woodframe construction, unless the building official having jurisdiction deems that an undue risk to the public health, safety or welfare is involved.

(b) If any portion of any structure exempted by this section deviates from substantial compliance with conventional framing requirements for woodframe construction found in the most recent edition of Title 24 of the California Administrative Code or tables of limitation for woodframe construction, as defined by the applicable building code duly adopted by the local jurisdiction or the state, the building official having jurisdiction shall require the preparation of plans, drawings, specifications, or calculations for that portion by, or under the direct supervision of, a licensed architect or registered engineer. The documents for that portion shall bear the stamp and signature of the licensee who is responsible for their preparation.

6737.2. Supplementary practice by civil engineer

Nothing in this chapter shall prohibit a civil engineer, registered under the provisions of this chapter, from practicing or offering to practice any engineering in connection with or supplementary to civil engineering studies or activities as defined in Section 6731.

6737.3. Exemption of contractors

A contractor, licensed under Chapter 9 (commencing with Section 7000) of Division 3, is exempt from the provisions of this chapter relating to the practice of electrical or mechanical engineering so long as the services he or she holds himself or herself out as able to perform or does perform, which services are subject to the provisions of this chapter, are performed by, or under the responsible supervision of a registered electrical or mechanical engineer insofar as the electrical or mechanical engineer practices the branch of engineering for which he or she is registered.

This section shall not prohibit a licensed contractor, while engaged in the business of contracting for the installation of electrical or mechanical systems or facilities, from designing those systems or facilities in accordance with applicable construction codes and standards for work to be performed and supervised by that contractor within the classification for which his or her license is issued, or from preparing electrical or mechanical shop or field drawings for work which he or she has contracted to perform. Nothing in this section is intended to imply that a licensed contractor may design work which is to be installed by another person.

6738. Engineering business - business names

(a) This chapter does not prohibit one or more civil, electrical, or mechanical engineers from practicing or offering to practice within the scope of their registration, civil, electrical, or mechanical engineering as a sole proprietorship, partnership, firm, or corporation (hereinafter called business), if all of the following requirements are met:

(1) A civil, electrical, or mechanical engineer currently registered in this state is an owner, part owner, or officer in charge of the engineering practice of the business.

(2) All engineering plans, specifications, reports, and documents are prepared under the responsible charge of a registered engineer in the appropriate branch of professional engineering.

(3) The business name of a California business shall only contain the name of any person who is registered by the board in a branch of professional engineering, a licensed land surveyor, a licensed architect, or a geologist registered under the Geologist Act (Chapter 12.5 (commencing with Section 7800)). Any offer, promotion, or advertisement by the business which contains the name of any individual in the business, other than by use of the name of an individual in the business name, shall clearly and specifically designate the license or registration discipline of each individual named.

(b) An out-of-state business with a branch office in this state shall meet the requirements of subdivision (a) and shall have a part owner or officer who is in charge of the engineering work in the branch in this state, who is registered in this state, and who is physically present at the branch office in this state on a regular basis. However, the name of the business may contain the name of any person not registered in this state if that person is appropriately registered in another state. Any offer, promotion, or advertisement which contains the name of any individual in the business, other than by use of the names of the individuals in the business name, shall clearly and specifically designate the license or registration discipline of each individual named.

(c) A fictitious name may be used for an engineering business if (1) the name does not conflict with paragraph (3) of subdivision (a) requiring that names used in the business name shall be appropriately registered individuals, and (2) an organization record form is filed with the board.

(d) A nonregistered person may also be a part owner or an officer of a civil, electrical, or mechanical engineering business if the requirements of subdivision (a) are met.

(e) This chapter does not prevent an individual or business engaged in any line of endeavor other than the practice of civil, electrical, or mechanical engineering from employing or contracting with a registered civil, electrical, or mechanical engineer to perform the respective engineering services incidental to the conduct of business.

(f) This section shall not prevent the use of the name of any business engaged in rendering civil, electrical, or mechanical engineering services, including the use by any lawful successor or survivor, which lawfully was in existence on December 31, 1987. However, the business is subject to paragraphs (1) and (2) of subdivision (a), and the business shall file an organization record form with the board as designated by board rule.

(g) A business engaged in rendering civil, electrical, or mechanical engineering services may use in its name the name of a deceased or retired person provided all of the following conditions are satisfied:

(1) The person's name had been used in the name of the business, or a predecessor in interest of the business, prior to and after the death or retirement of the person.

(2) The person shall have been an owner, part owner, or officer of the business, or an owner, part owner, or officer of the predecessor in interest of the business.

(3) The person shall have been licensed as a professional engineer, or a land surveyor, or an architect, or a geologist, (A) by the appropriate licensing board if that person is operating a place of business or practice in this state, or (B) by the applicable state board in the event no place of business existed in this state.

(4) The person, if retired, has consented to the use of the name and does not permit the use of the name in the title of another professional engineering business in this state

during the period of the consent. However, the retired person may use his or her name as the name of a new or purchased business if it is not identical in every respect to that person's name as used in the former business.

(5) The business shall be subject to the provisions of paragraphs (1) and (2) of subdivision (a).

(6) The business files a current organization record form with the board.

(h) This section does not affect the provisions of Sections 6731.2 and 8726.1.

6739. Exemption of federal officers and employees

Officers and employees of the United States of America practicing solely as such officers or employees are exempt from registration under the provisions of this chapter.

6740. Exemption of subordinates

A subordinate to a civil, electrical or mechanical engineer registered under this chapter, or a subordinate to a civil, electrical or mechanical engineer exempted from registration under this chapter, insofar as he acts solely in such capacity, is exempt from registration under the provisions of this chapter. This exemption, however, does not permit any such subordinate to practice civil, electrical or mechanical engineering in his own right or to use the title, "civil engineer" or "structural engineer" or "electrical engineer" or "mechanical engineer" or "soil engineer."

6741. Exemption of nonresidents

Any person, firm, partnership, or corporation is exempt from registration under the provisions of this chapter who meets all the following:

(a) Is a nonresident of the State of California.

(b) Is legally qualified in another state to practice as a civil, electrical, or mechanical engineer.

(c) Does not maintain a regular place of business in this state.

(d) Offers to but does not practice civil, electrical, or mechanical engineering in this state.

6742. Exemption for real estate broker or salesman

Any person, firm or corporation holding a license as real estate broker or real estate salesman, when making appraisals and valuations of real estate properties, while engaged in the business or acting in the capacity of a real estate broker or a real estate salesman, within the meaning of the California Real Estate Act is exempt from registration under the provisions of this chapter.

6743. Effect of chapter on surveyors

This chapter does not affect Chapter 15 of Division 3 of this code, relating to surveyors, except insofar as this chapter is expressly made applicable.

6744. Exemption for land owner

This chapter does not require registration for the purpose of practicing civil engineering, by an individual, a member of a firm or partnership, or by an officer of a corporation on or in

connection with property owned or leased by the individual, firm, partnership, or corporation, unless the civil engineering work to be performed involves the public health or safety or the health and safety of employees of the individual, firm, partnership or corporation.

6745. Exemption for building alterations

This chapter does not prohibit any person, firm or corporation from furnishing, either alone or with subcontractors, labor and materials, with or without plans, drawings, specifications, instruments of service or other data covering such labor and materials:

(a) For store fronts, interior alterations or additions, fixtures, cabinet work, furniture or other appliances or equipment.

(b) For any work necessary to provide for their installation.

(c) For any alterations or additions to any building necessary to or attendant upon the installation of such store fronts, interior alterations or additions, fixtures, cabinet work, furniture, appliances or equipment; provided, such alterations do not affect the structural safety of the building.

6746. Exemption for communications industry

Plans, specifications, reports and documents relating to communication lines and equipment prepared by employees of communications companies which come under the jurisdiction of the Public Utilities Commission, and by employees of contractors while engaged in work on communication equipment for communications companies which come under the jurisdiction of the Public Utilities Commission, are not subject to the provisions of this chapter.

6747. Exemption for industries

(a) This chapter, except for those provisions that apply to civil engineers and civil engineering, shall not apply to the performance of engineering work by a manufacturing, mining, public utility, research and development, or other industrial corporation, or by employees of that corporation, provided that work is in connection with, or incidental to, the products, systems, or services of that corporation or its affiliates.

(b) For purposes of this section, "employees" also includes consultants, temporary employees, contract employees, and those persons hired pursuant to third-party contracts.

6748. Nuclear power plants

(a) Notwithstanding Section 6747, this chapter applies to engineering work approved by a person employed by a privately or publicly owned utility in the planning, designing, construction, operation, or maintenance of a nuclear powerplant which is owned or operated by the utility.

(b) Any engineering work subject to subdivision (a) shall be approved by a professional engineer registered in the applicable discipline of engineering specified in Section 6732.

6749. Written Contracts

(a) A professional engineer shall use a written contract when contracting to provide professional engineering services to a client pursuant to this chapter. The written contract shall be executed by the professional engineer and the client, or his or her representative, prior to the professional engineer commencing work, unless the client knowingly states in writing that work

may be commenced before the contract is executed. The written contract shall include, but not be limited to, all of the following:

(1) A description of the services to be provided to the client by the professional engineer.

(2) A description of any basis of compensation applicable to the contract, and the method of payment agreed upon by the parties.

(3) The name, address, and license or certificate number of the professional engineer, and the name and address of the client.

(4) A description of the procedure that the professional engineer and the client will use to accommodate additional services.

(5) A description of the procedure to be used by any party to terminate the contract.

(b) This section shall not apply to any of the following:

(1) Professional engineering services rendered by a professional engineer for which the client will not pay compensation.

(2) A professional engineer who has a current or prior contractual relationship with the client to provide engineering services, and that client has paid the professional engineer all of the fees that are due under the contract.

(3) If the client knowingly states in writing after full disclosure of this section that a contract which complies with the requirements of this section is not required.

(4) Professional engineering services rendered by a professional engineer to any of the following:

(A) A professional engineer licensed or registered under this chapter.

(B) A land surveyor licensed under Chapter 15 (commencing with Section 8700).

(C) An architect licensed under Chapter 3 (commencing with Section 5500).

(D) A contractor licensed under Chapter 9 (commencing with Section 7000).

(E) A geologist or a geophysicist licensed under Chapter 12.5 (commencing with Section 7800).

(F) A manufacturing, mining, public utility, research and development, or other industrial corporation, if the services are provided in connection with or incidental to the products, systems, or services of that corporation or its affiliates.

(G) A public agency.

(c) "Written contract" as used in this section includes a contract that is in electronic form.

Article 4. Registration

6750. Application; fee

An application for registration as a professional engineer or certification as an engineer-in-training shall be made to the board on the prescribed form, with all statements made therein under oath, and shall be accompanied by the application fee prescribed by this chapter. An application for registration as a professional engineer shall specify, additionally, the branch of engineering in which the applicant desires registration.

6751. Qualifications

(a) The applicant for certification as an engineer-in-training shall comply with all of the following:

(1) Not have committed acts or crimes constituting grounds for denial of registration under Section 480.

(2) Successfully pass the first division of the examination. The applicant shall be eligible to sit for the first division of the examination after satisfactory completion of three years or more of college or university education in a board-approved engineering curriculum or after completion of three years or more of board-approved experience.

The board need not verify the applicant's eligibility other than to require the applicant to sign a statement of eligibility on the application form.

(b) The applicant for registration as a professional engineer shall comply with all of the following:

(1) Not have committed acts or crimes constituting grounds for denial of registration under Section 480.

(2) Furnish evidence of six years or more of qualifying experience in engineering work satisfactory to the board evidencing that the applicant is competent to practice the character of engineering in the branch for which he or she is applying for registration, and successfully pass the second division of the examination.

(3) The applicant for the second division of the examination shall successfully pass the first division examination or shall be exempt therefrom.

6751.2. Foreign applicants

The board may consider the professional experience and education acquired by applicants outside the United States which in the opinion of the board is equivalent to the minimum requirements of the board established by regulation for professional experience and education in this state.

6751.5. Rules for approval of engineering school curricula

The board shall by rule establish the criteria to be used for approving curricula of schools of engineering.

6752. Civil engineer experience

An applicant for registration as a civil engineer must have gained his experience under the direction of a civil engineer legally qualified to practice.

6753. Equivalents for experience; education; teaching

With respect to applicants for registration as professional engineers, the board:

(a) Shall give credit as qualifying experience of four years, for graduation with an engineering degree from a college or university the curriculum of which has been approved by the board.

(b) May at its discretion give credit as qualifying experience up to a maximum of two years, for graduation with an engineering degree from a nonapproved engineering curriculum or graduation with an engineering technology degree in an approved engineering technology curriculum.

(c) May at its discretion give credit as qualifying experience of up to one-half year, for each year of successfully completed postsecondary study in an engineering curriculum up to a maximum of four years credit. A year of study shall be at least 32 semester units or 48 quarter units.

(d) May at its discretion give credit as qualifying experience not in excess of one year, for a postgraduate degree in a school of engineering with a board-approved postgraduate curriculum.

(e) May at its discretion give credit as qualifying experience for engineering teaching, not in excess of one year, if of a character satisfactory to the board.

The sum of qualifying experience credit for subdivision (a) to (e), inclusive, shall not exceed five years.

6753.5. Experience in armed forces

All applicants shall be given equal credit for engineering experience in the armed forces of United States as with any other comparable engineering experience.

6754. Examinations in general

Examination for registration shall be held at such times and places as the board shall determine.

The second division of the examination for all branches specified in Section 6732 shall be administered at least once each year.

Work of the board relating to examination and registration may be divided into committees as the board shall direct. The scope of examinations and the methods of procedure may be prescribed by board rule.

6755. Examination requirements

(a) Examination duration and composition shall be designed to conform to the following general principle: The first division of the examination shall test the applicant's knowledge of appropriate fundamental engineering subjects, including mathematics and the basic sciences; the second division of the examination shall test the applicant's ability to apply his or her knowledge and experience and to assume responsible charge in the professional practice of the branch of engineering in which the applicant is being examined.

(b) The applicant for the second division of the examination shall have successfully passed the first division examination or shall be exempt therefrom.

(c) The board may by rule provide for a waiver of the first division of the examination for applicants whose education and experience qualifications substantially exceed the requirements of Section 6751.

(d) The board may by rule provide for a waiver of the second division of the examination for persons eminently qualified for registration in this state by virtue of their standing in the engineering community, their years of experience, and those other qualifications as the board deems appropriate.

6755.1. Second division exam requirements

(a) The second division of the examination for registration as a professional engineer shall include questions to test the applicant's knowledge of state laws and the board's rules and regulations regulating the practice of professional engineering. The board shall prepare and distribute to applicants for the second division of the examination, a plain language pamphlet describing the provisions of this chapter and the board's rules and regulations regulating the practice of professional engineering in this state. The board shall administer the test on state laws

and board rules regulating the practice of engineering in this state as a separate part of the second division of the examination for registration as a professional engineer.

(b) On and after April 1, 1988, the second division of the examination for registration as a civil engineer shall also include questions to test the applicant's knowledge of seismic principles and engineering surveying principles as defined in Section 6731.1. No registration for a civil engineer shall be issued by the board on or after January 1, 1988, to any applicant unless he or she has successfully completed questions to test his or her knowledge of seismic principles and engineering surveying principles.

The board shall administer the questions to test the applicant's knowledge of seismic principles and engineering surveying principles as a separate part of the second division of the examination for registration as a civil engineer.

It is the intent of the Legislature that this section confirm the authority of the board to issue registrations prior to April 1, 1988, to applicants based on examinations not testing the applicant's knowledge of seismic principles and engineering surveying principles as defined in Section 6731.1.

6756. Certification as engineer-in-training

(a) An applicant for certification as an engineer-in-training shall, upon making a passing grade in that division of the examination prescribed in Section 6755, relating to fundamental engineering subjects, be issued a certificate as an engineer-in-training. A renewal or other fee, other than the application fee, may not be charged for this certification. The certificate shall become invalid when the holder has qualified as a professional engineer as provided in Section 6762.

(b) An engineer-in-training certificate does not authorize the holder thereof to practice or offer to practice civil, electrical or mechanical engineering work, in his or her own right, or to use the titles specified in Sections 6732, 6736, and 6736.1 ~~and 6763~~.

(c) A person may not use the title of engineer-in-training, or any abbreviation of that title, unless he or she is the holder of a valid engineer-in-training certificate.

(Stats. 2002, Ch. 1013 (SB 2026).)

6757. Separate branches of engineering

Applicants who profess to be qualified in more than one branch of engineering shall be required to file an application for each branch in which they wish to be registered.

6758. Applications, reexamination

An applicant failing in an examination may be examined again upon filing a new application and the payment of the application fee fixed by this chapter.

6759. Comity applicants

The board, upon application therefor, on its prescribed form, and the payment of the application fee fixed by this chapter, may issue a certificate of registration as a professional engineer, without written examination, to any person holding a certificate of registration issued to him or her by any state or country when the applicant's qualifications meet the requirements of this chapter, and rules established by the board. The board shall not require a comity applicant to meet any requirement not required of California applicants. For purposes of this section,

equivalent second division examinations shall be eight-hour written examinations prepared by or administered by a state or territory either by single or combined branch at the level generally administered by the board to persons who passed or were exempted from the first division examination. Applicants who have passed an equivalent second division combined branch or a single branch examination in a branch not recognized for registration in California shall be registered in the branch in which their experience and education indicate the closest relationship.

6760. Temporary authorization for practice

A temporary authorization to practice engineering in a branch defined by this chapter may be granted for a specific project, upon application and payment of the fee prescribed in Section 6799, for a period not to exceed 180 consecutive days, if the applicant complies with all of the following:

(a) The applicant maintains no place of business in this state.

(b) The applicant is legally qualified to practice the branch of engineering in which he or she is seeking the temporary authorization in the state or country where he or she maintains a place of business.

(c) (1) The applicant, if applying for a temporary authorization to practice civil engineering, demonstrates by means of an individual appearance before the board satisfactory evidence of his or her knowledge of the application of seismic forces in the design of structures or adequate knowledge in any of the other phases of civil engineering as related to the specific project for which the temporary authorization is requested.

(2) The applicant, if applying for a temporary authorization to practice in a branch defined by this chapter other than civil engineering demonstrates by means of an individual appearance before the board, satisfactory evidence of his or her knowledge in the branch of professional engineering in which the applicant proposes to practice under the temporary authorization as related to the specific project for which the temporary authorization is requested.

(d) The applicant takes and passes the examination in the state laws and board rules prescribed in Section 6755.1.

(e) The applicant notifies the board in writing of his or her intention to practice, stating the approximate date he or she intends to commence the specific project and the approximate duration of the specific project, which shall not exceed 180 days from the commencement date of the specific project.

Upon completion of the requirements, the executive officer, on direction of the board, shall issue a temporary authorization to the applicant.

6761. Majority vote on qualifications

In determining the qualifications of an applicant for registration, a majority vote of the board is required.

6762. Certification as professional engineer

Any applicant who has passed the second division examination and has otherwise qualified hereunder as a professional engineer, shall have a certificate of registration issued to him or her as a professional engineer in the particular branch for which he or she is found qualified.

6762.5. Retired license

(a) The board shall issue, upon application and payment of the fee established by Section 6799, a retired license (registration), to an engineer who has been licensed by the board for a minimum of 5 years within California and a minimum of 20 years within the United States or territory of the United States, and who holds a license that is not suspended, revoked, or otherwise disciplined, or subject to pending discipline under this chapter.

(b) The holder of a retired license issued pursuant to this section shall not engage in any activity for which an active engineer's license is required. An engineer holding a retired license shall be permitted to use the titles "retired professional engineer," "professional engineer, retired," or either of those titles with the licensee's branch designation inserted for the word "professional" for example, "retired civil engineer" or "civil engineer, retired."

(c) The holder of a retired license shall not be required to renew that license.

(d) In order for the holder of a retired license issued pursuant to this section to restore his or her license to active status, he or she shall pass the second division examination that is required for initial licensure with the board.

6763. Structural, soil, soils, geotechnical authority

Application for authority to use the title "structural engineer," "soil engineer," "soils engineer," or "geotechnical engineer" shall be made to the board on forms prescribed by it and shall be accompanied by the application fee fixed by this chapter.

An applicant for authority to use the title "structural engineer," "soil engineer," "soils engineer," or "geotechnical engineer" who has passed the examination prescribed by the board, or an applicant for authority to use the title "soil engineer," "soils engineer," or "geotechnical engineer" whose application is submitted prior to July 1, 1986, and who has otherwise demonstrated that he or she is qualified, shall have a certificate of authority issued to him or her.

For purposes of this chapter, an authority to use the title "structural engineer," "soil engineer," "soils engineer," or "geotechnical engineer" is an identification of competence and specialization in a subspecialty of civil engineering and necessitates education or experience in addition to that required for registration as a civil engineer.

6763.1. Structural Engineer examination requirements

An applicant to use the title "structural engineer" shall have successfully passed a written examination that incorporates a national examination for structural engineering by a nationally recognized entity approved by the board, if available, and a supplemental California specific examination. The California specific examination shall test the applicant's knowledge of state laws, rules, and regulations, and of seismicity and structural engineering unique to practice in this state. The board shall use the national examination on or before December 31, 2004.

6763.5. Refund to unqualified applicants

If an applicant for registration as a professional engineer or certification as an engineer-in-training, or for authorization to use the title "structural engineer" or "soil engineer," is found by the board to lack the qualifications required for admission to the examination for such registration, certification, or authorization, the board may, in accordance with the provisions of Section 158 of this code, refund to him or her one-half of the amount of his or her application fee.

6764. Seal or stamp

Each professional engineer registered under this chapter shall, upon registration, obtain a seal or stamp of a design authorized by the board bearing the registrant's name, number of his or her certificate or authority, the legend "professional engineer" and the designation of the particular branch or authority in which he or she is registered, and may bear the expiration date of the certificate or authority.

6765. Duplicate certificate

A duplicate certificate of registration to replace one lost, destroyed, or mutilated may be issued subject to the rules and regulations of the board. The duplicate certificate fee fixed by this chapter shall be charged.

6766. Certificate as evidence

An unsuspended, unrevoked and unexpired certificate and endorsement of registry made under this chapter, is presumptive evidence in all courts and places that the person named therein is legally registered.

Article 5. Disciplinary Proceedings

6775. Complaints against Professional Engineers

The Board may receive and investigate complaints against registered professional engineers, and make findings thereon.

By a majority vote, the board may reprove, suspend for a period not to exceed two years, or revoke the certificate of any professional engineer registered under this chapter:

(a) Who has been convicted of a crime substantially related to the qualifications, functions and duties of a registered professional engineer, in which case the certified record of conviction shall be conclusive evidence thereof.

(b) Who has been found guilty by the board of any deceit, misrepresentation, or fraud, in his or her practice.

(c) Who has been found guilty by the board of negligence or incompetence in his or her practice.

(d) Who has been found guilty by the board of any breach or violation of a contract to provide professional engineering services.

(e) Who has been found guilty of any fraud or deceit in obtaining his or her certificate.

(f) Who aids or abets any person in the violation of any provision of this chapter.

(g) Who in the course of the practice of professional engineering has been found guilty by the board of having violated a rule or regulation of unprofessional conduct adopted by the board.

(h) Who violates any provision of this chapter.

6775.1. Complaints against Engineers-in-Training

The board may receive and investigate complaints against engineers-in-training, and make findings thereon.

By a majority vote, the board may revoke the certificate of any engineer-in-training:

(a) Who has been convicted of a crime as defined in subdivision (a) of Section 480.

(b) Who has been found guilty of any fraud, deceit, or misrepresentation in obtaining his or her engineer-in-training certificate or certificate of registration, certification, or authority as a professional engineer.

(c) Who aids or abets any person in the violation of any provision of this chapter.

(d) Who violates Section 119 with respect to an engineer-in-training certificate or commits any act described in Section 6787.

(e) Who violates any provision of this chapter.

6776. Conduct of proceedings

The proceedings under this article shall be conducted in accordance with Chapter 4 (commencing with Section 11370), Chapter 4.5 (commencing with Section 11400), and Chapter 5 (commencing with Section 11500) of Part 1 of Division 3 of Title 2 of the Government Code, and the board shall have all the powers granted therein.

6777. Reissue of certificate

The board may reissue a certificate of registration, certification, or authority, to any person whose certificate has been revoked if a majority of the members of the board vote in favor of such reissuance for reasons the board deems sufficient.

6779. Revocation upon conviction

A plea or verdict of guilty or a conviction following a plea of nolo contendere made to a charge substantially related to the qualifications, functions and duties of a registered professional engineer is deemed to be a conviction within the meaning of this article. The board may order the certificate suspended or revoked, or may decline to issue a certificate, when the time for appeal has elapsed, or the judgment of conviction has been affirmed on appeal or when an order granting probation is made suspending the imposition of sentence, irrespective of a subsequent order under the provisions of Section 1203.4 of the Penal Code allowing such person to withdraw his plea of guilty and to enter a plea of not guilty, or setting aside the verdict of guilty, or dismissing the accusation, information or indictment.

Article 6. Offenses Against the Chapter

6785. Investigations

The board shall have the power, duty, and authority to investigate violations of the provisions of this chapter.

6786. Duty to prosecute

It is the duty of the respective members of the legal system to prosecute all persons charged with the violation of any of the provisions of this chapter.

It is the duty of the executive officer of the board, under the direction of the board, to aid these officers in the enforcement of this chapter.

6787. Acts constituting misdemeanor

Every person is guilty of a misdemeanor

(a) Who, unless he or she is exempt from registration under this chapter, practices or offers to practice civil, electrical, or mechanical engineering in this state according to the provisions of this chapter without legal authorization.

(b) Who presents or attempts to file as his or her own the certificate of registration of a licensed professional engineer unless he or she is the person named on the certificate of registration.

(c) Who gives false evidence of any kind to the board, or to any member thereof, in obtaining a certificate of registration.

(d) Who impersonates or uses the seal of a licensed professional engineer.

(e) Who uses an expired, suspended, or revoked certificate issued by the board.

(f) Who represents himself or herself as, or uses the title of, registered civil, electrical, or mechanical engineer, or any other title whereby that person could be considered as practicing or offering to practice civil, electrical, or mechanical engineering in any of its branches, unless he or she is correspondingly qualified by registration as a civil, electrical, or mechanical engineer under this chapter.

(g) Who, unless appropriately registered, manages, or conducts as manager, proprietor, or agent, any place of business from which civil, electrical, or mechanical engineering work is solicited, performed, or practiced, except as authorized pursuant to subdivision (d) of Section 6738 and Section 8726.1.

(h) Who uses the title, or any combination of that title, of "professional engineer," "licensed engineer," "registered engineer," or the branch titles specified in Section 6732, or the authority titles specified in ~~Section 6763~~ Sections 6736 and 6736.1, or "engineer-in-training," or who makes use of any abbreviation of such title that might lead to the belief that he or she is a registered engineer, or holds a certificate as an engineer-in-training, without being registered or certified as required by this chapter.

(i) Who uses the title "consulting engineer" without being registered as required by this chapter or without being authorized to use that title pursuant to legislation enacted at the 1963, 1965 or 1968 Regular Session.

(j) Who violates any provision of this chapter.

(Stats. 2002, Ch. 1013 (SB 2026).)

6788. Repair fraud

Any person who violates any provision of subdivisions (a) to (i), inclusive, of Section 6787 in connection with the offer or performance of engineering services for the repair of damage to a residential or nonresidential structure caused by a ~~natural~~ disaster for which a state of emergency is proclaimed by the Governor pursuant to Section 8625 of the Government Code, or for which an emergency or major disaster is declared by the President of the United States, shall be punished by a fine up to ten thousand dollars ($10,000), or by imprisonment in the state prison for 16 months, or for two or three years, or by both the fine and imprisonment, or by a fine up to one thousand dollars ($1,000), or by imprisonment in the county jail not exceeding one year, or by both the fine and imprisonment.

(Stats. 2002, Ch. 1013 (SB 2026).)

Article 7. Revenue

6795. Certificate renewal time periods

Certificates of registration as a professional engineer, and certificates of authority, shall be valid for a period of two years from the assigned date of renewal. Biennial renewals shall be staggered on a monthly basis. To renew an unexpired certificate, the certificate holder shall, on or before the date of expiration indicated on the renewal receipt, apply for renewal on a form prescribed by the board, and pay the renewal fee prescribed by this chapter.

6795.1. Notice of pending expiration; contents; second notice

Within 60 to 90 days prior to the expiration of a certificate of registration or certificate of authority, the board shall mail to the registrant or authority holder a notice of the pending expiration. That notice shall include application forms for renewal. If there is no response by the expiration date, the board shall provide a second notice to the registrant's or authority holder's address.

6796. Renewal of expired certificate

Except as otherwise provided in this article, certificates of registration as a professional engineer, and certificates of authority may be renewed at any time within three years after expiration on filing of application for renewal on a form prescribed by the board and payment of all accrued and unpaid renewal fees. If the certificate is renewed more than 60 days after its expiration, the certificate holder, as a condition precedent to renewal, shall also pay the delinquency fee prescribed by this chapter. Renewal under this section shall be effective on the date on which the application is filed, on the date on which the renewal fee is paid, or on the date on which the delinquency fee, if any, is paid, whichever last occurs.

The expiration date of a certificate renewed pursuant to this section shall be determined pursuant to Section 6795.

6796.1. Expiration of suspended certificate; renewal

A suspended certificate is subject to expiration and shall be renewed as provided in this article, but such renewal does not entitle the holder of the certificate, while it remains suspended and until it is reinstated, to engage in the activity to which the certificate relates, or in any other activity or conduct in violation of the order or judgment by which it was suspended.

6796.2. Expiration of revoked certificate

A revoked certificate is subject to expiration as provided in this article, but it may not be renewed. If it is reinstated after its expiration, the holder of the certificate, as a condition precedent to its reinstatement, shall pay a reinstatement fee in an amount equal to the renewal fee in effect on the last regular renewal date before the date on which it is reinstated, plus the delinquency fee, if any, accrued at the time of its revocation.

6796.3. Delinquent registration, over three years

Certificates of registration as a professional engineer, and certificates of authority to use the title "structural engineer," "soil engineer," or "consulting engineer" that are not renewed within three years after expiration may not be renewed, restored, reinstated, or reissued unless all of the following apply:

(a) The registrant or certificate holder has not committed any acts or crimes constituting grounds for denial of registration or of a certificate under Section 480.

(b) The registrant or certificate holder takes and passes the examination that would be required of him or her if he or she were then applying for the certificate for the first time, or otherwise establishes to the satisfaction of the board that, with due regard for the public interest, he or she is qualified to practice the branch of engineering in which he or she seeks renewal or reinstatement.

(c) The registrant or certificate holder pays all of the fees that would be required of him or her if he or she were then applying for the certificate for the first time. If the registrant or certificate holder has been practicing in this state with an expired or delinquent license and receives a waiver from taking the examination as specified in subdivision (b) then he or she shall pay all accrued and unpaid renewal fees.

The board may, by regulation, provide for the waiver or refund of all or any part of the application fee in those cases in which a certificate is issued without an examination pursuant to this section.

6796.5. Effect of renewal of expired or delinquent certificate

Once an expired or delinquent certificate of registration or certificate of authority is renewed, restored, reinstated, or reissued pursuant to Section 6796 or 6796.3, all of the following shall apply:

(a) The board shall continue to have full jurisdiction and authority over the registrant or certificate holder as if the registration or authority had not expired or become delinquent.

(b) The work performed by the registrant or certificate holder during a period of expiration or delinquency shall be deemed lawful and validly performed as to persons or entities other than the registrant or authority holder.

(c) The renewal, restoration, reinstatement, or reissuance of a registration or certificate of authority shall not affect liability issues regarding work performed during a period of expiration or delinquency, nor does the fact of performance during a period of expiration on delinquency affect liability issues.

6797. Accounting and deposit of funds

The department shall receive and account for all money derived from the operation of this chapter and, at the end of each month, shall report such money to the State Controller and shall pay it to the State Treasurer, who shall keep the money in a separate fund known as the Professional Engineer's and Land Surveyor's Fund.

For accounting and record keeping purposes, the Professional Engineer's and Land Surveyor's Fund shall be deemed to be a single special fund, and shall be available for expenditure only for the purposes as are now or may hereafter be provided by law.

The fees and civil penalties received under this chapter shall be deposited in the Professional Engineer's and Land Surveyor's Fund. All moneys in the fund are hereby appropriated for the purposes of this chapter.

6798. Refunds

The board may make refunds of all fees in accordance with Section 158 of this code.

6799. Fee schedule

The amount of the fees prescribed by this chapter shall be fixed by the board in accordance with the following schedule:

(a) The fee for filing each application for registration as a professional engineer and each application for authority level designation at not more than four hundred dollars ($400), and for each application for certification as an engineer-in-training at not more than one hundred dollars ($100).

(b) The temporary registration fee for a professional engineer at not more than 25 percent of the application fee in effect on the date of application.

(c) The renewal fee for each branch of professional engineering in which registration is held, and the renewal fee for each authority level designation held, at no more than the professional engineer application fee currently in effect.

(d) The fee for a retired license at not more than 50 percent of the professional engineer application fee in effect on the date of application.

(e) The delinquency fee at not more than 50 percent of the renewal fee in effect on the date of reinstatement.

(f) The board shall establish by regulation an appeal fee for examination. The regulation shall include provisions for an applicant to be reimbursed the appeal fee if the appeal results in passage of examination. The fee charged shall be no more than the costs incurred by the board.

(g) All other document fees are to be set by the board by rule.

Applicants wishing to be examined in more than one branch of engineering shall be required to pay the additional fee for each examination after the first.

BUILDING DESIGN AUTHORITY

Board for Professional Engineers and Land Surveyors ◆ 2535 Capitol Oaks Drive, Suite 300 ◆ Sacramento, CA 95833 ◆ (916) 263-2233
http://www.dca.ca.gov/pels
BPELS_Enforcement_Information@dca.ca.gov

STRUCTURAL ENGINEERS may design any building of any type.

CIVIL ENGINEERS may design any building of any type EXCEPT public schools and hospitals.

ARCHITECTS may design any building of any type EXCEPT the structural portion of a hospital.

UNLICENSED INDIVIDUALS may design only the following types of buildings:

Single-family dwellings of woodframe construction not more than two stories and basement in height.

Multiple dwellings containing not more than four dwelling units of woodframe construction of not more than two stories and basement in height and no more than four dwelling units per lot.

Garages or other structures appurtenant to the dwellings described above of woodframe construction not more than two stores and basement in height.

NOTE: **If any portion of the structures described above does not meet the conventional woodframe requirements described in Title 24 of the California Code of Regulations or in the building codes of the local jurisdiction, then the building official having jurisdiction shall require the plans, calculations, and specifications** for that portion of the structure to be prepared and signed and sealed by a licensed engineer or a licensed architect.

Agricultural and ranch buildings of woodframe construction, unless the building official having jurisdiction determines that an undue risk to the public health, safety, or welfare is involved.

Store fronts, interior alterations or additions, fixtures, cabinetwork, furniture, or other appliances or equipment, including any work necessary to install these items, or any alterations or additions to any building necessary to install these items, as long as the alterations do not affect the structural safety of the building.

Applicable Statutes:
Business and Professions Code sections 5500.1, 5537, 5537.1, 5537.5, 6731, 6736, 6737, and 6737.1.
Education Code section 17302
Health and Safety Code section 129805

Architects are licensed by the California Architects Board. Any questions regarding architects, the practice of architecture, or the Architects Practice Act (Business and Professions Code section 5500, et seq.) should be directed to the California Architects Board at 400 R Street, Suite 4000, Sacramento, CA, 95814; (916) 445-3393; http://www.cab.ca.gov; cab@dca.ca.gov.

The design and construction of public schools is regulated by the Division of the State Architect (DSA). Any questions regarding Education Code section 17302 should be directed to DSA at 1130 K Street, Suite 101, Sacramento, CA, 95814; (916) 445-8100; http://www.dsa.ca.gov.

The design and construction of hospitals is regulated by the Office of Statewide Health Planning and Development (OSHPD). Any questions regarding Health and Safety Code section 129805 should be directed to OSHPD at 1600 9th Street, Room 420, Sacramento, CA, 95814; (916) 654-3362; http://www.oshpd.ca.gov.

附錄 8

PROFESSIONAL DESIGN FIRM REGISTRATION APPLICATION

Additional application forms can be downloaded from the IDPR Web site at www.dpr.state.il.us.

Types of Business Organizations	Professional Services Offered by the Firm
- Corporation, Professional Service Corporation - General Partnership, Limited Liability Partnership, Limited Partnership - Limited Liability Company - Sole Proprietorship/D.B.A.	- Architecture - Land Surveying - Professional Engineering - Structural Engineering

REQUIREMENTS

Any business which includes the practice of architecture, land surveying, professional engineering, and/or structural engineering within its stated purpose, practices, or holds itself out as available to practice architecture, land surveying, professional engineering and/or structural engineering, shall register with the Department as a Professional Design Firm. Authority to transact business in Illinois **must** be obtained from the Illinois Secretary of State **prior** to registering with the Department. You may contact the Illinois Secretary of State/Corporate Division at 217-782-7880 or 312-793-3380. **(The purpose clause must include the practice of the specified profession(s) for which the design firm is seeking registration. The purpose clause for a corporation is in the Articles of Incorporation or Certificate of Foreign Authority. In LLC's and LLP's that clause is in the Articles of Organization.)**

The Design Firm Registration allows a design firm to offer any one or combination of the four design services under the umbrella of one registration. The registration will expire on April 30 of each odd numbered year.

Sole Propietorships - Any sole proprietorship not owned and operated by an Illinois licensed design professional licensed under the Illinois Architecture Practice Act of 1989, the Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, and the Structural Engineering Act of 1989 shall be prohibited from offering professional design services to the public. The licensed sole proprietor may only offer services in the profession(s) in which the sole proprietor is licensed.

Architecture

No business shall practice or hold itself out as available to practice architecture until it is registered with the Department.

Two-thirds of the board of directors, in the case of a corporation, 2/3 of the general partners, in the case of a partnership, limited liability partnership, limited partnership or 2/3 of the members, in the case of a limited liability company must be licensed in any state to practice architecture, professional engineering, structural engineering or land surveying.

At least one Illinois licensed architect shall be designated through a Resolution as the **managing agent** in responsible charge of the practice of architecture in Illinois. The managing agent must be a director, member, or partner, and a **full-time employee** of the business entity. The managing agent shall at all times maintain a valid, active license to practice architecture in Illinois.

The firm must provide the name and the name of the state and professional license number of each director, member or partner of the firm who is a licensed design professional.

The firm must provide a list of all office locations at which the firm provides architectural services. In addition, the firm must have a **resident architect** overseeing the architectural practices in **each Illinois office location** in which architectural services are provided.

The firm must list all assumed names of the business.

The firm must notify the Department, in writing, of any changes in the information requested on the application.

In the event the managing agent status changes, the professional design firm must notify the Department by certified mail within 10 business days and shall notify the Department within 30 days of the name and license number of the newly designated managing agent.

Land Surveying

No business shall practice or hold itself out as available to practice land surveying until it is registered with the Department.

At least one Illnois licensed land surveyor shall be designated through a Resolution as the **managing agent** in responsible charge of the practice of the land surveying activities in Illinois. The managing agent must be a **full-time employee** of the business entity. The managing agent shall at all times maintain a valid, active license to practice land surveying in Illinois.

The firm must provide the name and the name of the state and professional license number of each director, member or partner of the firm who is a licensed design professional.

The firm must provide a list of all office locations at which the firm provides land surveying services. In addition, the firm must have an Illinois licensed **resident land surveyor** overseeing the land surveying activities in **each Illinois office location** in which land surveying services are provided.

The firm must list all assumed names of the business.

The firm must notify the Department, in writing, of any changes in the information requested on the application.

In the event the managing agent status changes, the professional design firm must notify the Department by certified mail within 10 business days and shall notify the Department within 30 days of the name and license number of the newly designated managing agent.

Professional Engineering

No business shall practice or hold itself out as available to practice professional engineering until it is registered with the Department.

At least one Illinois licensed professional engineer shall be designated through a Resolution as the **managing agent** in responsible charge of the practice of the professional engineering activities in Illinois. The managing agent must be a **full-time employee** of the business entity. The managing agent shall at all times maintain a valid, active license to practice professional engineering in Illinois.

The firm must provide the name and the name of the state and professional license number of each director, member or partner of the firm who is a licensed design professional.

The firm must provide a list of all office locations.

The firm must list all assumed names of the business.

The firm must notify the Department, in writing, of any changes in the information requested on the application.

In the event the managing agent status changes, the professional design firm must notify the Department by certified mail within 10 business days and shall notify the Department within 30 days of the name and license number of the newly designated managing agent.

Structural Engineering

No business shall practice or hold itself out as available to practice structural engineering until it is registered with the Department.

At least one Illinois licensed structural engineer shall be designated through a Resolution as the **managing agent** in responsible charge of the practice of the structural engineering activities in Illinois. The managing agent must be a **full-time employee** of the business entity. The managing agent shall at all times maintain a valid, active license to practice structural engineering in Illinois.

The firm must provide the name and the name of the state, and professional license number of each director, member or partner of the firm who is a licensed design professional.

Structural Engineering (Continued)

The firm must provide a list of all office locations.

The firm must list all assumed names of the business.

The firm must notify the Department, in writing, of any changes in the information requested on the application.

In the event the managing agent status changes, the professional design firm must notify the Department by certified mail within 10 business days and shall notify the Department within 30 days of the name and license number of the newly designated managing agent.

APPLICATION INSTRUCTIONS

If your firm is currently registered as a Professional Design firm and you are making a change to your registration, do <u>not</u> complete this application. Contact the Department for further instructions.

General Instructions

NOTE: An Illinois Professional Service Corporation must satisfy the organization and name requirements set forth in the Professional Service Corporation Act.

1. **Use a typewriter to complete the application.**
2. **Identify the type of business**, e.g., corporation by checking the appropriate box at the top of Page 1 of the application.
3. **Identify the profession(s)** for which the design firm is seeking registration by checking the appropriate box(es) at the top of page 1 of the application. The design firm, if authorized by the Illinois Secretary of State's office, may offer any one or combination of the four design services.
4. Submit the application, appropriate supporting documents, and $75 application fee to Illinois Department of Professional Regulation, P.O. Box 7007, Springfield, Illinois 62791.

NOTE: Application will be returned if fee and ALL documentation does not accompany the application

Business Firms

Part I. All questions/boxes <u>must</u> be answered. If none, answer "None."

Box 6. Identify **ALL** other locations at which the professional design firm provides the specified services. (If not applicable, indicate n/a.) If the firm offers architectural or land surveying services, identify the **resident architect or land surveyor** at each location.

Box 7. Identify all Assumed Names of the business. (If not applicable, indicate n/a.)

Part II. List **ALL** directors, members or partners, type of professional license, state of licensure, and license number for each. List data on the application and attach additional sheet if needed.

Part III. Each designated managing agent (for each profession checked at the top of Page 1 of the application) must date and affix his/her signature and **Illinois** professional **reproducible** seal to the application in Part III on Page 2. Copy Page 2 as needed.

Supporting Documents (Corporation, Professional Service Corporation, LLC, LLP, Limited Partnership):

1. For each managing agent and each director, partner or member who holds a professional license, submit a photocopy of each license held. The copy of the license must indicate profession and license expiration date.

Business Firms (Continued)

2 Submit a COMPLETE filed copy (including purpose clause) of the Articles of Incorporation, Articles of Organization/Operating Agreement or Limited Partnership Agreement issued by the Illinois Secretary of State, including any amended articles. If a foreign (non-Illinois) corporation, LLC, LLP or Limited Partnership, submit a certified copy of the Certificate of Authority (including the purpose clause) issued by the Illinois Secretary of State. **The purpose clause must include the practice of the specified professions for which the design firm is seeking registration.**

3. Submit Certificate of Good Standing issued by the Illinois Secretary of State. (Not required if firm recently registered with Secretary of State.)

4. Submit the latest Annual Report filed with the Illinois Secretary of State identifying the current directors, members, or partners (in the case of a limited partnership). (Not required if first registered within the last year with Secretary of State.)

5. Submit the signed and dated original Resolution of the Board of Directors, Members, or Partners designating the Illinois licensed design professional(s) as the managing agent(s) who has the Illinois practice of that profession in his/her charge. The Resolution shall include the licensee's name and Illinois license number, that the licensee is a full-time employee of the firm, the licensee's relationship to the firm, e.g. director (if applicable), and that the licensee has been designated as the managing agent in charge of that professional practice in Illinois.

6. If applicable, submit a copy of the application filed with the Illinois Secretary of State to adopt an Assumed Name and the letter issued by the Illinois Secretary of State approving the assumed name.

Supporting Documents (General Partnership)

1. Submit a photocopy of professional license for each general partner listed in Part II of the application and each managing agent.

2. Copy of the signed and dated Partnership Agreement which includes the names of the partnership, business address, and names of **ALL** partners.

3. Submit the signed and dated original Resolution of the Partners designating the Illinois licensed design professional(s) as the managing agent(s) who has the Illinois practice in that profession in his/her charge. The Resolution shall include the licensee's name and Illinois license number, that the licensee is a full-time employee of the firm, the licensee's relationship to the firm, e.g. partner (if applicable), and that the licensee has been designated as the managing agent in charge of that professional practice in Illinois.

4. A copy of the documentation from the County Clerk where the partnership has been filed.

Sole Proprietorships/ Assumed Name:

Part I. Complete Boxes 1-5.
Name of Professional Design Firm is the Assumed Name filed with the County Clerk.

Part II. List your name, type of professional license, state of licensure (Illinois) and license number.

Part III. Licensee must date, sign and affix Illinois reproducible seal to the application in Part III on Page 2.

Supporting Documents:

1. Letter from County Clerk where Assumed Name has been filed.

2. Copy of professional license indicating profession and license expiration date.

PROFESSIONAL DESIGN FIRM REGISTRATION APPLICATION

PROFESSION CODE	APPLICATION FEE
184	$75

IMPORTANT NOTICE: Completion of this form is necessary to accomplish the requirements outlined in 225 ILCS 305, 325, 330, and 340 (Illinois Compiled Statutes). Disclosure of this information is REQUIRED. Failure to provide this information could result in a penalty as outlined in said ACT.

TYPE OF BUSINESS: (Check only one.)

- ☐Corporation
- ☐Professional Service Corportion
- ☐General Partnership
- ☐Limited Liability Partnership (LLP)
- ☐Limited Partnership
- ☐Limited Liability Corporation (LLC)
- ☐Sole Proprietorship/D.B.A.

PROFESSIONS: (Check all that apply.)

- ☐Architecture
- ☐Land Surveying
- ☐Professional Engineering
- ☐Structural Engineering

PART I - NAME OF BUSINESS AND PRINCIPAL ADDRESS

1. NAME OF PROFESSIONAL DESIGN FIRM	2. FEIN NUMBER, OR IF INDIVIDUAL OWNERSHIP WITHOUT FEIN NUMBER, SOCIAL SECURITY NUMBER OF OWNER
3. ADDRESS OF PRINCIPAL OFFICE	4. DATE OF INCORPORATION/FORMATION
	5. BUSINESS PHONE (Include Area Code)

6. ADDRESS OF EACH OFFICE IN ILLINOIS AT WHICH PROFESSIONAL SERVICES ARE PROVIDED.
(If more than 2 locations, attach additional sheets, with the firm name typed clearly on top)

A. ADDRESS:		B. ADDRESS:	
Will this location offer or provide architectural services in Illinois? ☐Yes ☐No	If Yes, provide name and Illinois license number of the Resident Architect, a full time employee at this location:	Will this location offer or provide architectural services in Illinois? ☐Yes ☐No	If Yes, provide name and Illinois license number of the Resident Architect, a full time employee at this location:
Will this location offer or provide land surveying services in Illinois? ☐Yes ☐No	If Yes, provide name and Illinois license number of the Resident Land Surveyor, a full time employee at this location:	Will this location offer or provide land surveying services in Illinois? ☐Yes ☐No	If Yes, provide name and Illinois license number of the Resident Land Surveyor, a full time employee at this location:

7. ASSUMED NAMES OF BUSINESS (attach additional sheet if necessary).

A.	B.

PART II - DIRECTOR / PARTNER / MEMBER INFORMATION

- For ALL Directors / Partners / Members, please list their names, address, and if applicable, licensure information. (Attach additional sheet, with the firm name typed clearly on top, if needed.)

NAME AND ADDRESS	TYPE OF LICENSE(S)	STATE(S) ISSUING LICENSURE	LICENSE NUMBER(S)

COMPLETE PAGE 2 OF THIS FORM

Professional Design Firm Registration Application (Continued)

Name of Firm:

FEIN or SS#:

Profession Name: Professional Design Firm

PART III - MANAGING AGENT

Each managing agent designated in an attached resolution or Articles or Organization or Operating Agreement, must complete a segment below. If a managing agent licensed in more than one profession is designated as having more than one profession in her/his charge, then the licensee should complete a section for each designated profession. (If more space is needed, you may photo-copy this side for additional space; please reflect the firm name on additional sheets.)

A. I am designated as the managing agent in charge of the profession marked below:

☐ Architecture ☐ Land Surveying ☐ Professional Engineering ☐ Structural Engineering

1. NAME	2. ADDRESS	3. ILLINOIS LICENSE NUMBER(S)

I hereby certify: that I completed and/or reviewed this application, and that the answers appearing herein are true and correct to the best of my knowledge and belief, and that I have accepted the designation as managing agent for the professions and licenses reflected, and that I am legally authorized to sign for this firm.

SEAL of Managing Agent

Signature of Managing Agent _____ Date _____

My signature above authorizes the Department of Professional Regulation to reduce the amount of this check if the amount submitted is not correct. I understand this will be done only if the amount submitted is greater than the required fee hereunder, but in no event shall such reduction be made in an amount greater than $50.

A. I am designated as the managing agent in charge of the profession marked below:

☐ Architecture ☐ Land Surveying ☐ Professional Engineering ☐ Structural Engineering

1. NAME	2. ADDRESS	3. ILLINOIS LICENSE NUMBER(S)

I hereby certify: that I completed and/or reviewed this application, and that the answers appearing herein are true and correct to the best of my knowledge and belief, and that I have accepted the designation as managing agent for the professions and licenses reflected, and that I am legally authorized to sign for this firm.

SEAL of Managing Agent

Signature of Managing Agent _____ Date _____

My signature above authorizes the Department of Professional Regulation to reduce the amount of this check if the amount submitted is not correct. I understand this will be done only if the amount submitted is greater than the required fee hereunder, but in no event shall such reduction be made in an amount greater than $50.

A. I am designated as the managing agent in charge of the profession marked below:

☐ Architecture ☐ Land Surveying ☐ Professional Engineering ☐ Structural Engineering

1. NAME	2. ADDRESS	3. ILLINOIS LICENSE NUMBER(S)

I hereby certify: that I completed and/or reviewed this application, and that the answers appearing herein are true and correct to the best of my knowledge and belief, and that I have accepted the designation as managing agent for the professions and licenses reflected, and that I am legally authorized to sign for this firm.

SEAL of Managing Agent

Signature of Managing Agent _____ Date _____

I UNDERSTAND THAT FEES ARE NOT REFUNDABLE. My signature above authorizes the Department of Professional Regulation to reduce the amount of this check if the amount submitted is not correct. I understand this will be done only if the amount submitted is greater than the required fee hereunder, but in no event shall such reduction be made in an amount greater than $50.

How can you get a MOE?

The MOE is intended to enhance an engineer's knowledge, not to place an undue burden. As such, a MOE can be obtained in several ways. Some possibilities are as follows:

- *Full-time, on-campus study immediately after completing the BSCE*
- *Working professionally for a year or so and then returning for full-time, on-campus study.*
- *Taking traditional master's degree courses on campus on a part-time basis while working.*
- *Taking all or most courses via distance learning, likely Web-based distance learning.*
- *Taking courses part-time via traditional and distance learning mechanisms and perhaps using the resources of two or more educational providers.*

The coursework may come from a degreed or non-degreed program. The program may be accredited or certified.

How long will it take to implement the changes?

Some states or other jurisdictions may implement the policy for civil engineer licensing in the near future, subject to grace periods, while others may not do so for a decade or more.

For more information, please contact:
Jeff Russell: russell@engr.wisc.edu
Stu Walesh: STUWALESH@aol.com
Tom Lenox: tlenox@asce.org
Or visit the ASCE website at
www.asce.org/raisethebar/

ASCE POLICY STATEMENT 465
Positive. Professional. Future Focused.

SYNOPSIS

ASCE POLICY STATEMENT 465
Positive. Professional. Future Focused.

In October 1998, the ASCE Board of Direction adopted Policy Statement 465, which directed a study on "raising the bar" for the practice of civil engineering (CE) at the professional level. This study was explicitly supported in *Building ASCE's Future – Strategic Plan* adopted in 2000 by the Society. The ASCE Board formed a task committee in October 1999 and charged it with "developing a vision of full realization of ASCE Policy Statement 465...and a strategy for achieving this vision." The committee researched the education, experience, licensing, and certification requirements of other professions; studied the history and forms of CE education in the U.S. and elsewhere; and reviewed current and future challenges to and opportunities for CE. Their work resulted in a Revised Policy 465, entitled "Academic Prerequisites for Licensure and Professional Practice." The Policy states:

> *The American Society of Civil Engineers (ASCE) supports the concept of the Master's degree or Equivalent as a prerequisite for licensure and the practice of civil engineering at a professional level.*
>
> *ASCE encourages institutions of higher education, governmental units, employers, civil engineers, and other appropriate organizations to endorse, support, and promote the concept of mandatory post-baccalaureate education for the practice of civil engineering at a professional level. The implementation of this effort should occur through establishing appropriate curricula in the formal education experience, appropriate recognition and compensation in the workplace, and congruent standards for licensure.*

In October 2001, the ASCE Board of Direction formally adopted Revised Policy 465 and established the Task Committee for Academic Prerequisites for Professional Practice (TCAP^3). The Board charged TCAP^3 with developing, organizing, and executing a detailed plan for the full realization of Policy 465. This includes working in the following three areas: (1) Curriculum; (2) Accreditation and (3) Licensure.

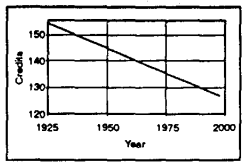
ASCE American Society of Civil Engineers

FREQUENTLY ASKED QUESTIONS

Why are we looking at this?

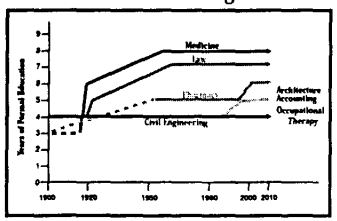
Since 1925, the BSCE degree unit requirement has decreased about 30 units along with a 20% reduction in the technical content.

Trend in Reduced Total Credit-Hours



At the turn of the 19th Century, engineering had one of the longest professional education programs at four years. Now, medicine, law, pharmacy, accounting, and architecture require formal education beyond a four-year degree. Not surprisingly, over the last ten years civil engineer salaries have lagged in comparison to these professions.

A Leader No Longer



The formal education required for civil engineers to practice at the professional level for the 21st century is increasing and a strategy must be developed to ensure that civil engineers receive fair consideration for the value and contributions that they make. What's more, most civil engineers indicate that they have obtained the level of a fifth year of formal education to practice at the professional level.

What is a MOE?

The Master's or Equivalent (MOE) represents that education beyond the baccalaureate degree required to master the fundamental specialized knowledge required for practice of civil engineering at the professional level. An underlying component of the required body of knowledge is the earning of at least one degree in civil engineering and completion of one degree from an ABET accredited engineering program. The purpose of the MOE is to encourage various BS - Master's combinations that build on individual abilities and interests and more fully meet society's increasingly complex civil engineering needs.

Master's or Equivalent (MOE)

Purpose: Increase breadth and depth of formal education
Flexibility: Choice of focus, timing, and access
Quality: Maintain rigor

How will Policy 465 impact practicing engineers and current college students?

Currently, licensed Professional Engineers, regardless of their Master's or Equivalent (MOE) status, will not be affected by the MOE requirement. Some reasonable grace period, during which the MOE requirement will be waived, will be needed to ensure that those who are in the education and licensure pipeline are not set back by the MOE requirement. However, many current students will be encouraged to complete a MOE.

How will Policy 465 impact the future licensing process?

When the MOE concept takes effect, a licensed civil engineer will be required to have a body of specialized knowledge represented by a baccalaureate degree and a Master's or Equivalent, plus the applicable national licensing exams, appropriate experience, and credentials and portfolio reviews.

ASCE POLICY STATEMENT 465

Positive. Professional. Future Focused.

Define the "OE" portion of MOE.

The "OE" part of the MOE recognizes that some Master's candidates may earn their graduate degrees in nontraditional ways, such as completing about 30 semester credits of acceptable graduate-level course work beyond that required for the baccalaureate degree, and/or earning a degree via Internet-based distance learning. The intent is to provide content flexibility and ease of access while maintaining or exceeding traditional graduate course quality.

Engineering MOEs

MEngr or MS in civil engineering
MEngr or MS in other engineering fields
PhD in civil engineering
PhD in other engineering fields

Non-Engineering MOEs

MS in science
MS in architecture
MS in city and urban planning
MASTER of business administration
MASTER of public administration
PhD in science

Non-Degree Option

30 semester credits of acceptable graduate-level course work beyond that required for the baccalaureate degree.

附錄 10

THE INTERNATIONAL REGISTRY OF PROFESSIONAL ENGINEERS
LICENSED IN THE UNITED STATES AND RECOGNIZED BY THE UNITED STATES COUNCIL FOR INTERNATIONAL ENGINEERING PRACTICE

INFORMATION CIRCULAR 1000

A. BACKGROUND INFORMATION

A.1 International Mobility of Engineering Service Providers

Within the United States, the professional practice of engineering is regulated by the individual state and territorial governments. In other nations of the world, the professional practice of engineering is controlled or regulated in a variety of ways. In some countries the practice is regulated by government at the national or sub-national level. In other countries, practice privileges are granted through credentialization by a professional association which may be chartered, or recognized by the national government to assess qualifications and grant recognition. For engineering service providers moving between countries, the licensing and recognition processes can be complicated and confusing.

In the mid-1980's, with the advent of the U.S.-Canada Free Trade Agreement and its successor, NAFTA, the United States Council for International Engineering Practice was formed to further the mobility of professional engineers between international communities. With the formation of USCIEP, and through a number of separate forums involving a host of foreign countries with a similar interest in mobility of professional service providers, there has now developed an International Registry of Professional Engineers through which those engineers meeting specific qualifications may be listed.

Only those countries which are signatories to an International Engineer framework agreement may establish and maintain an International Registry recognized by the related International Coordinating Committee. Among the signatory countries, those engineers who are listed in the Registry are accorded mutual recognition of professional qualifications. Mutual recognition of professional qualifications does **not**, however, automatically bestow a right or privilege to practice professional engineering within a host country. It is expected, though, that recognition in the International Registry will simplify the application process between signatory countries and may, in some cases, substantially reduce additional assessment processes required to obtain a license or permit to practice in a foreign jurisdiction.

As part of its service to U.S. professional engineers listed in the Registry, USCIEP will maintain and transmit the registrant's records – and will assist registrants in their applications to foreign jurisdictions.

A.2 The Structure of USCIEP

The organizations which comprise USCIEP are:

(a) Accrediting Board for Engineering and Technology (ABET). ABET has responsibility for accrediting engineering programs at U.S. colleges and universities and for recognizing, where appropriate, those engineering programs within others countries considered to be substantially equivalent to accredited engineering programs in the United States.

(b) National Council of Examiners for Engineering and Surveying (NCEES). NCEES is the body of jurisdictional licensing boards for the practice of engineering within the U.S. This body provides the forum for collaboration among engineering licensing boards, and the promotion of common principles for the licensure of professional engineers.

(c) American Council of Engineering Companies (ACEC), and National Society of Professional Engineers (NSPE). ACEC and NSPE provide for the advocacy interests of professional engineering service providers, both as individual professional engineers and as private sector engineering companies.

It is through USCIEP that these relevant engineering organizations work together to enhance mobility of engineering professionals across international borders, while preserving the responsibility that all engineering professionals have to safeguarding the public health, safety and welfare wherever they practice their profession.

A.3 Role of the International Registry.

USCIEP is recognized by the Office of the U.S. Trade Representative as the Relevant Engineering Organization for the purpose of cross-border engineering mobility agreements conducted under authority of the U.S. government and the World Trade Organization. In this capacity, USCIEP has engaged in a series of talks involving cross-border services initiated under the

(a) North American Free Trade Agreement (NAFTA)

(b) Asia Pacific Economic Cooperation (APEC), and

(c) Transatlantic Economic Partnership (TEP).

In addition to these initiatives, USCIEP has also been involved in cross-border mobility initiatives with a number of the English-Speaking nations through a forum growing out of earlier discussions on mutual recognition of engineering education programs.

As a result of these and similar activities, many nations of the world have agreed to establish an international register through which there is a mutual recognition of professional qualifications. Although the registry does not, alone, provide the right of practice privilege within a host foreign country, the registry does, in conjunction with

bilateral practice recognition agreements, satisfy some or all of the requirements within the host country for full professional recognition and engineering practice privileges.

For engineers recognized by the USCIEP International Registry, their applications for recognition or licensure by a host country or host country jurisdiction would be administered in a manner very similar to those record holders in the NCEES Records Program who make application for licensure by comity to the various jurisdictions of the United States.

Although USCIEP is authorized to negotiate international recognition agreements on behalf of its member organizations, USCIEP does not have the authority to bind its member organizations without their separate and express approvals. Under no circumstances are agreements negotiated by USCIEP binding upon a jurisdictional licensing board of the United States unless that board, at its sole discretion, elects to accept the conditions of such agreement.

B. ELIGIBILITY FOR ADMISSION TO THE REGISTRY

B.1 General.

For admission to the USCIEP Registry, one must first hold an engineering license and be in good standing on the registry of one or more of the state or territorial licensing boards. It is also necessary for admittance to the Registry, that one:

(a) must be a graduate of a recognized engineering education program,

(b) must have taken and passed one of the Fundamentals of Engineering (FE) assessment examinations approved by the NCEES,

(c) must have taken and passed one or more of the Principles and Practice of Engineering (PE) assessment examinations approved by the NCEES, and

(d) must have no prior sanctions resulting in a suspension or revocation of the engineering practice license by any jurisdiction.

Further, eligibility for admission to the USCIEP Registry will be based upon satisfying the additional assessment requirements described below, and complying with ongoing requirements for continuing professional education and satisfactory professional conduct.

B.2 Recognized Engineering Education Programs

(a) A graduate of an engineering program accredited by the ABET/EAC is considered to have met the academic qualification requirement for admission to the USCIEP Registry.

(b) A graduate of an appropriate engineering program accredited under an accreditation system recognized by ABET through a mutual recognition

agreement as being Substantially Equivalent to the accreditation program requirements of ABET/EAC is considered to have met the academic qualification requirements for admission to the USCIEP Registry.

(c) For admission to the USCIEP Registry, there are no alternatives to the academic standards prescribed in this Section B.2.

B.3 Assessment for Independent Practice

For admission to the USCIEP Registry, an applicant must have been assessed for independent practice by, and be licensed in, one or more jurisdictions of the United States through a process substantially consistent with provisions of the NCEES Model Law. Further, the applicant must complete the application for entry into the NCEES Records Program thereby providing confirmation of satisfactory assessment by the jurisdiction granting initial engineering license.

B.4 Assessment of Qualifying Experience

In addition to the basic requirements described above for jurisdictional licenses, there are further international requirements for admittance to the USCIEP Registry. Described below are the additional requirements.

B.4.1 Seven Years Qualifying Experience (Post Graduation)

Candidates must demonstrate a record of not less than seven years of qualifying experience. At least four years of such qualifying experience will have been obtained at the time of initial registration as a Professional Engineer. For admittance to the USCIEP Registry, candidates are required to confirm not less than seven years of total qualifying experience.

B.4.2 Two Years in Responsible Charge of Significant Engineering Work.

Candidates must demonstrate a record of not less than two years of experience being in responsible charge of significant engineering work. Candidates will be considered to have been in responsible charge of significant engineering work when they have:

(a) planned, designed, coordinated and executed a small project; or

(b) undertaken part of a large project based on an understanding of the whole project; or

(c) undertaken novel or complex work responsibility.

This experience requirement may occur concurrently with the experience requirement of B.4.1 above.

B.5 Continuing Professional Development

Candidates for admittance to the USCIEP Registry must meet minimum standards for continuing professional competence (CPC) as a condition of remaining on the Registry. For registrants who comply with CPC requirements of a jurisdiction in which they are licensed, those jurisdictional standards will be accepted as being satisfactory. Where registrants have no statutory obligation for CPC, they must comply with CPC standards of the NCEES Model CPC Guidelines (15 PDH units per year) as a condition for continued listing on the USCIEP Registry.

B.6 Codes of Professional Conduct

Engineers seeking admittance to the USCIEP Registry are required as part of their application, to submit a sworn statement attesting to any sanctions they may have received for violation of the Code or other provisions of the applicable licensing laws. A reaffirmation is required at each renewal of the registration certificate.

A suspension or revocation of one's license to practice engineering constitutes just cause for removal from the USCIEP Registry.

C. DECLARATION OF ENGINEERING DISCIPLINE

Most of the jurisdictions within the United States grant a generic (non-discipline specific) license, and rely upon the individual's ethical obligation to practice only within one's area of professional competence. Some jurisdictions, however, do license engineers under discipline-specific titles of recognition. For purposes of the USCIEP Registry, there will be no restriction placed upon the discipline-specific competencies to be admitted. Each candidate, however, will be required to declare an area of expertise from one of the nine engineering disciplines listed below:

Civil	Environmental	Industrial
Structural	Mechanical	Mining
Geotechnical	Electrical	Chemical

A candidate for admittance to the USCIEP Registry may declare more than one engineering discipline, and may also indicate one or more areas of specialty practice as subgroups of the principal engineering discipline designations. For multiple declarations, the work experience profile will be expected to reflect appropriate qualifying experience for each discipline-specific area in which expertise is claimed.

D. REGISTRATION CERTIFICATES AND RECORDS VERIFICATION

Registrants will receive a registration certificate attesting to their recognition by the USCIEP International Registry. Upon request by a registrant, and payment of the prescribed processing fee, the registrant's records will be furnished to the designated jurisdictional authority in the foreign country to which application for recognition is made. USCIEP will also assist the registrant in resolving questions of admittance that might arise in those nations with which USCIEP has a mutual recognition agreement.

E. SCHEDULE OF FEES

The schedule of fees is as follows:

(a) Application Fee, Current NCEES Record Holder	$70.00
(b) Application Fee, Non-Record Holder[1]	$195.00
(c) Renewal Fee, International Registry	$50.00
(d) Transmittal Fee[2], International Registry	$75.00

F. APPLICATION FORMS

For applicants who are listed with the NCEES Records Program and who meet the International Registry eligibility requirements, it is necessary to complete only USCIEP Form 1100 (Application for Admittance) for application to the registry. For applicants who are not currently listed with the NCEES records program, the application process consists of completing the USCIEP Form 1100 along with application to the NCEES Records Program using NCEES Form 350. USCIEP Form 1100 and NCEES Form 350 are available from the USCIEP International Monitoring Committee.

International Registry Monitoring Committee
United States Council for International Engineering Practice
280 Seneca Creek Road
P. O. Box 1686
Clemson, South Carolina 29633-1686 USA

Attn: Lisa Townsend
Telephone: (800) 250-3196

[1] Includes fee for application to NCEES Records Program
[2] Includes cost of overseas transmittal by normal delivery mail services, expedited service arrangements will be extra.

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This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the Controlling Law.

STANDARD FORM OF AGREEMENT BETWEEN OWNER AND ENGINEER FOR PROFESSIONAL SERVICES

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

Issued and Published Jointly By

AMERICAN CONSULTING ENGINEERS COUNCIL

National Society of Professional Engineers
Professional Engineers in Private Practice

AMERICAN SOCIETY OF CIVIL ENGINEERS

PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE
a practice division of the
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

AMERICAN CONSULTING ENGINEERS COUNCIL

AMERICAN SOCIETY OF CIVIL ENGINEERS

This Agreement has been prepared for use with the Standard General Conditions of the Construction Contract (No. 1910-8, 1996 Edition) of the Engineers Joint Contract Documents Committee. Their provisions are interrelated, and a change in one may necessitate a change in the other. For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (No. 1910-17) (1996 Edition). For guidance on the completion and use of this Agreement, see EJCDC Users Guide, No. 1910-50.

EJCDC No. 1910-1 (1996 Edition)

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STANDARD FORM OF AGREEMENT
BETWEEN OWNER AND ENGINEER
FOR
PROFESSIONAL SERVICES

THIS IS AN AGREEMENT effective as of _____ , _____ ("Effective Date") between

_____

_____ ("OWNER") and

_____

_____ ("ENGINEER").

OWNER intends to _____

_____

_____

_____

_____

_____

_____ ("Project").

OWNER and ENGINEER in consideration of their mutual covenants as set forth herein agree as follows:

ARTICLE 1 - SERVICES OF ENGINEER

1.01 Scope

A. ENGINEER shall provide the Basic and Additional Services set forth herein and in Exhibit A.

B. Upon this Agreement becoming effective, ENGINEER is authorized to begin Basic Services as set forth in Exhibit A.

C. If authorized by OWNER, ENGINEER shall furnish Resident Project Representative(s) with duties, responsibilities and limitations of authority as set forth in Exhibit D.

ARTICLE 2 - OWNER'S RESPONSIBILITIES

2.01 General

A. OWNER shall have the responsibilities set forth herein and in Exhibit B.

ARTICLE 3 - TIMES FOR RENDERING SERVICES

3.01 General

A. ENGINEER's services and compensation under this Agreement have been agreed to in anticipation of the orderly and continuous progress of the Project through completion. Unless specific periods of time or specific dates for providing services are specified in this Agreement, ENGINEER's obligation to render services hereunder will be for a period which may reasonably be required for the completion of said services.

B. If in this Agreement specific periods of time for rendering services are set forth or specific dates by which services are to be completed are provided, and if such periods of time or dates are changed through no fault of ENGINEER, the rates and amounts of compensation provided for herein shall be subject to equitable adjustment. If OWNER has requested changes in the scope, extent, or character of the Project, the time of performance of ENGINEER's services shall be adjusted equitably.

C. For purposes of this Agreement the term "day" means a calendar day of 24 hours.

3.02 Suspension

A. If OWNER fails to give prompt written authorization to proceed with any phase of services after completion of the immediately preceding phase, or if ENGINEER's services are delayed through no fault of ENGINEER, ENGINEER may, after giving seven days written notice to OWNER, suspend services under this Agreement.

B. If ENGINEER's services are delayed or suspended in whole or in part by OWNER, or if ENGINEER's services are extended by Contractor's actions or inactions for more than 90 days through no fault of ENGINEER, ENGINEER shall be entitled to equitable adjustment of rates and amounts of compensation provided for elsewhere in this Agreement to reflect, reasonable costs incurred by ENGINEER in connection with, among other things, such delay or suspension and reactivation and the fact that the time for performance under this Agreement has been revised.

ARTICLE 4 - PAYMENTS TO ENGINEER

4.01 Methods of Payment for Services and Reimbursable Expenses of ENGINEER

A. *For Basic Services.* OWNER shall pay ENGINEER for Basic Services performed or furnished under Exhibit A, Part 1, as set forth in Exhibit C.

B. *For Additional Services.* OWNER shall pay ENGINEER for Additional Services performed or furnished under Exhibit A, Part 2, as set forth in Exhibit C.

C. *For Reimbursable Expenses.* In addition to payments provided for in paragraphs 4.01.A and 4.01.B, OWNER shall pay ENGINEER for Reimbursable Expenses incurred by ENGINEER and ENGINEER's Consultants as set forth in Exhibit C.

4.02 Other Provisions Concerning Payments

A. *Preparation of Invoices.* Invoices will be prepared in accordance with ENGINEER's standard invoicing practices and will be submitted to OWNER by ENGINEER, unless otherwise agreed. The amount billed in each invoice will be calculated as set forth in Exhibit C.

B. *Payment of Invoices.* Invoices are due and payable within 30 days of receipt. If OWNER fails to make any payment due ENGINEER for services and expenses within 30 days after receipt of ENGINEER's invoice therefor, the amounts due ENGINEER will be increased at the rate of 1.0% per month (or the maximum rate of interest permitted

by law, if less) from said thirtieth day. In addition, ENGINEER may, after giving seven days written notice to OWNER, suspend services under this Agreement until ENGINEER has been paid in full all amounts due for services, expenses, and other related charges. Payments will be credited first to interest and then to principal.

C. *Disputed Invoices.* In the event of a disputed or contested invoice, only that portion so contested may be withheld from payment, and the undisputed portion will be paid.

D. *Payments Upon Termination.*

1. In the event of any termination under paragraph 6.06, ENGINEER will be entitled to invoice OWNER and will be paid in accordance with Exhibit C for all services performed or furnished and all Reimbursable Expenses incurred through the effective date of termination.

2. In the event of termination by OWNER for convenience or by ENGINEER for cause, ENGINEER, in addition to invoicing for those items identified in subparagraph 4.02.D.1, shall be entitled to invoice OWNER and shall be paid a reasonable amount for services and expenses directly attributable to termination, both before and after the effective date of termination, such as reassignment of personnel, costs of terminating contracts with ENGINEER's Consultants, and other related close-out costs, using methods and rates for Additional Services as set forth in Exhibit C.

E. *Records of ENGINEER's Costs.* Records of ENGINEER's costs pertinent to ENGINEER's compensation under this Agreement shall be kept in accordance with generally accepted accounting practices. To the extent necessary to verify ENGINEER's charges and upon OWNER's timely request, copies of such records will be made available to OWNER at cost.

F. *Legislative Actions.* In the event of legislative actions after the Effective Date of the Agreement by any level of government that impose taxes, fees, or costs on ENGINEER's services or other costs in connection with this Project or compensation therefor, such new taxes, fees, or costs shall be invoiced to and paid by OWNER as a Reimbursable Expense to which a Factor of 1.0 shall be applied. Should such taxes, fees, or costs be imposed, they shall be in addition to ENGINEER's estimated total compensation.

ARTICLE 5 - OPINIONS OF COST

5.01 Opinions of Probable Construction Cost

A. ENGINEER's opinions of probable Construction Cost provided for herein are to be made on the basis of ENGINEER's experience and qualifications and represent ENGINEER's best judgment as an experienced and qualified professional generally familiar with the industry. However, since ENGINEER has no control over the cost of labor, materials, equipment, or services furnished by others, or over the Contractor's methods of determining prices, or over competitive bidding or market conditions, ENGINEER cannot and does not guarantee that proposals, bids, or actual Construction Cost will not vary from opinions of probable Construction Cost prepared by ENGINEER. If OWNER wishes greater assurance as to probable Construction Cost, OWNER shall employ an independent cost estimator as provided in Exhibit B.

5.02 Designing to Construction Cost Limit

A. If a Construction Cost limit is established between OWNER and ENGINEER, such Construction Cost limit and a statement of ENGINEER's rights and responsibilities with respect thereto will be specifically set forth in Exhibit F, "Construction Cost Limit," to this Agreement.

5.03 Opinions of Total Project Costs

A. ENGINEER assumes no responsibility for the accuracy of opinions of Total Project Costs.

ARTICLE 6 - GENERAL CONSIDERATIONS

6.01 Standards of Performance

A. The standard of care for all professional engineering and related services performed or furnished by ENGINEER under this Agreement will be the care and skill ordinarily used by members of ENGINEER's profession practicing under similar circumstances at the same time and in the same locality. ENGINEER makes no warranties, express or implied, under this Agreement or otherwise, in connection with ENGINEER's services.

B. ENGINEER shall be responsible for the technical accuracy of its services and documents resulting therefrom, and OWNER shall not be responsible for discovering deficiencies therein. ENGINEER shall correct such deficiencies without additional compensation except to the

extent such action is directly attributable to deficiencies in OWNER-furnished information.

C. ENGINEER shall perform or furnish professional engineering and related services in all phases of the Project to which this Agreement applies. ENGINEER shall serve as OWNER's prime professional for the Project. ENGINEER may employ such ENGINEER's Consultants as ENGINEER deems necessary to assist in the performance or furnishing of the services. ENGINEER shall not be required to employ any ENGINEER's Consultant unacceptable to ENGINEER.

D. ENGINEER and OWNER shall comply with applicable Laws or Regulations and OWNER-mandated standards. This Agreement is based on these requirements as of its Effective Date. Changes to these requirements after the Effective Date of this Agreement may be the basis for modifications to OWNER's responsibilities or to ENGINEER's scope of services, times of performance, or compensation.

E. OWNER shall be responsible for, and ENGINEER may rely upon, the accuracy and completeness of all requirements, programs, instructions, reports, data, and other information furnished by OWNER to ENGINEER pursuant to this Agreement. ENGINEER may use such requirements, reports, data, and information in performing or furnishing services under this Agreement.

F. OWNER shall make decisions and carry out its other responsibilities in a timely manner and shall bear all costs incident thereto so as not to delay the services of ENGINEER.

G. Prior to the commencement of the Construction Phase, OWNER shall notify ENGINEER of any variations from the language indicated in Exhibit E, "Notice of Acceptability of Work," or of any other notice or certification that ENGINEER will be requested to provide to OWNER or third parties in connection with the Project. OWNER and ENGINEER shall reach agreement on the terms of any such requested notice or certification, and OWNER shall authorize such Additional Services as are necessary to enable ENGINEER to provide the notices or certifications requested.

H. ENGINEER shall not be required to sign any documents, no matter by whom requested, that would result in the ENGINEER's having to certify, guarantee or warrant the existence of conditions whose existence the ENGINEER cannot ascertain. OWNER agrees not to make resolution of any dispute with the ENGINEER or payment of any amount due to the ENGINEER in any way contingent upon the ENGINEER's signing any such certification.

I. During the Construction Phase, ENGINEER shall not supervise, direct, or have control over Contractor's work, nor shall ENGINEER have authority over or responsibility for the means, methods, techniques, sequences, or procedures of construction selected by Contractor, for safety precautions and programs incident to the Contractor's work in progress, nor for any failure of Contractor to comply with Laws and Regulations applicable to Contractor's furnishing and performing the Work.

J. ENGINEER neither guarantees the performance of any Contractor nor assumes responsibility for any Contractor's failure to furnish and perform the Work in accordance with the Contract Documents.

K. ENGINEER shall not be responsible for the acts or omissions of any Contractor(s), subcontractor or supplier, or of any of the Contractor's agents or employees or any other persons (except ENGINEER's own employees) at the Site or otherwise furnishing or performing any of the Contractor's work; or for any decision made on interpretations or clarifications of the Contract Documents given by OWNER without consultation and advice of ENGINEER.

L. The General Conditions for any construction contract documents prepared hereunder are to be the "Standard General Conditions of the Construction Contract" as prepared by the Engineers Joint Contract Documents Committee (Document No. 1910-8, 1996 Edition) unless both parties mutually agree to use other General Conditions as specifically referenced in Exhibit J.

6.02 Authorized Project Representatives

A. Contemporaneous with the execution of this Agreement, ENGINEER and OWNER shall designate specific individuals to act as ENGINEER's and OWNER's representatives with respect to the services to be performed or furnished by ENGINEER and responsibilities of OWNER under this Agreement. Such individuals shall have authority to transmit instructions, receive information, and render decisions relative to the Project on behalf of each respective party.

6.03 Design without Construction Phase Services

A. Should OWNER provide Construction Phase services with either OWNER's representatives or a third party, ENGINEER's Basic Services under this Agreement will be considered to be completed upon completion of the Final Design Phase or Bidding or Negotiating Phase as outlined in Exhibit A.

B. It is understood and agreed that if ENGINEER's Basic Services under this Agreement do not include Project observation, or review of the Contractor's performance, or any other Construction Phase services, and that such services will be provided by OWNER, then OWNER assumes all responsibility for interpretation of the Contract Documents and for construction observation or review and waives any claims against the ENGINEER that may be in any way connected thereto.

6.04 Use of Documents

A. All Documents are instruments of service in respect to this Project, and ENGINEER shall retain an ownership and property interest therein (including the right of reuse at the discretion of the ENGINEER) whether or not the Project is completed.

B. Copies of OWNER-furnished data that may be relied upon by ENGINEER are limited to the printed copies (also known as hard copies) that are delivered to the ENGINEER pursuant to Exhibit B. Files in electronic media format of text, data, graphics, or of other types that are furnished by OWNER to ENGINEER are only for convenience of ENGINEER. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk.

C. Copies of Documents that may be relied upon by OWNER are limited to the printed copies (also known as hard copies) that are signed or sealed by the ENGINEER. Files in electronic media format of text, data, graphics, or of other types that are furnished by ENGINEER to OWNER are only for convenience of OWNER. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk.

D. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the party delivering the electronic files. ENGINEER shall not be responsible to maintain documents stored in electronic media format after acceptance by OWNER.

E. When transferring documents in electronic media format, ENGINEER makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by ENGINEER at the beginning of this Project.

F. OWNER may make and retain copies of Documents for information and reference in connection with use on the Project by OWNER. Such Documents are not intended or represented to be suitable for reuse by OWNER or others on extensions of the Project or on any other project. Any such reuse or modification without written verification or adaptation by ENGINEER, as appropriate for the specific purpose intended, will be at OWNER's sole risk and without liability or legal exposure to ENGINEER or to ENGINEER's Consultants. OWNER shall indemnify and hold harmless ENGINEER and ENGINEER's Consultants from all claims, damages, losses, and expenses, including attorneys' fees arising out of or resulting therefrom.

G. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.

H. Any verification or adaptation of the Documents for extensions of the Project or for any other project will entitle ENGINEER to further compensation at rates to be agreed upon by OWNER and ENGINEER.

6.05 Insurance

A. ENGINEER shall procure and maintain insurance as set forth in Exhibit G, "Insurance."

B. OWNER shall procure and maintain insurance as set forth in Exhibit G, "Insurance." OWNER shall cause ENGINEER and ENGINEER's Consultants to be listed as additional insureds on any general liability or property insurance policies carried by OWNER which are applicable to the Project.

C. OWNER shall require Contractor to purchase and maintain general liability and other insurance as specified in the Contract Documents and to cause ENGINEER and ENGINEER's Consultants to be listed as additional insureds with respect to such liability and other insurance purchased and maintained by Contractor for the Project.

D. OWNER and ENGINEER shall each deliver to the other certificates of insurance evidencing the coverages indicated in Exhibit G. Such certificates shall be furnished prior to commencement of ENGINEER's services and at renewals thereafter during the life of the Agreement.

E. All policies of property insurance shall contain provisions to the effect that ENGINEER's and ENGINEER's Consultants' interests are covered and that in the event of payment of any loss or damage the insurers will have no

rights of recovery against any of the insureds or additional insureds thereunder.

F. At any time, OWNER may request that ENGINEER, at OWNER's sole expense, provide additional insurance coverage, increased limits, or revised deductibles that are more protective than those specified in Exhibit G. If so requested by OWNER, with the concurrence of ENGINEER, and if commercially available, ENGINEER shall obtain and shall require ENGINEER's Consultants to obtain such additional insurance coverage, different limits, or revised deductibles for such periods of time as requested by OWNER, and Exhibit G will be supplemented to incorporate these requirements.

6.06 Termination

A. The obligation to provide further services under this Agreement may be terminated:

1. *For cause*,

a. By either party upon 30 days written notice in the event of substantial failure by the other party to perform in accordance with the terms hereof through no fault of the terminating party.

b. By ENGINEER:

1) upon seven days written notice if ENGINEER believes that ENGINEER is being requested by OWNER to furnish or perform services contrary to ENGINEER's responsibilities as a licensed professional; or

2) upon seven days written notice if the ENGINEER's services for the Project are delayed or suspended for more than 90 days for reasons beyond ENGINEER's control.

3) ENGINEER shall have no liability to OWNER on account of such termination.

c. Notwithstanding the foregoing, this Agreement will not terminate as a result of such substantial failure if the party receiving such notice begins, within seven days of receipt of such notice, to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt thereof; provided, however, that if and to the extent such substantial failure cannot be reasonably cured within such 30 day period, and if such party has diligently attempted to cure the same and thereafter continues diligently to cure the same, then the cure period provided for herein shall extend up to, but in no case more than, 60 days after the date of receipt of the notice.

2. *For convenience*,

a. By OWNER effective upon the receipt of notice by ENGINEER.

B. The terminating party under paragraphs 6.06.A.1 or 6.06.A.2 may set the effective date of termination at a time up to 30 days later than otherwise provided to allow ENGINEER to demobilize personnel and equipment from the Site, to complete tasks whose value would otherwise be lost, to prepare notes as to the status of completed and uncompleted tasks, and to assemble Project materials in orderly files.

6.07 Controlling Law

A. This Agreement is to be governed by the law of the state in which the Project is located.

6.08 Successors, Assigns, and Beneficiaries

A. OWNER and ENGINEER each is hereby bound and the partners, successors, executors, administrators and legal representatives of OWNER and ENGINEER (and to the extent permitted by paragraph 6.08.B the assigns of OWNER and ENGINEER) are hereby bound to the other party to this Agreement and to the partners, successors, executors, administrators and legal representatives (and said assigns) of such other party, in respect of all covenants, agreements and obligations of this Agreement.

B. Neither OWNER nor ENGINEER may assign, sublet, or transfer any rights under or interest (including, but without limitation, moneys that are due or may become due) in this Agreement without the written consent of the other, except to the extent that any assignment, subletting, or transfer is mandated or restricted by law. Unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under this Agreement.

C. Unless expressly provided otherwise in this Agreement:

1. Nothing in this Agreement shall be construed to create, impose, or give rise to any duty owed by OWNER or ENGINEER to any Contractor, Contractor's subcontractor, supplier, other individual or entity, or to any surety for or employee of any of them.

2. All duties and responsibilities undertaken pursuant to this Agreement will be for the sole and exclusive benefit of OWNER and ENGINEER and not for the benefit of any other party. The OWNER agrees that the substance of the provisions of this paragraph 6.08.C shall appear in the Contract Documents.

6.09 Dispute Resolution

A. OWNER and ENGINEER agree to negotiate all disputes between them in good faith for a period of 30 days from the date of notice prior to exercising their rights under Exhibit H or other provisions of this Agreement, or under law. In the absence of such an agreement, the parties may exercise their rights under law.

B. If and to the extent that OWNER and ENGINEER have agreed on a method and procedure for resolving disputes between them arising out of or relating to this Agreement, such dispute resolution method and procedure is set forth in Exhibit H, "Dispute Resolution."

6.10 Hazardous Environmental Condition

A. OWNER represents to Engineer that to the best of its knowledge a Hazardous Environmental Condition does not exist.

B. OWNER has disclosed to the best of its knowledge to ENGINEER the existence of all Asbestos, PCB's, Petroleum, Hazardous Waste, or Radioactive Material located at or near the Site, including type, quantity and location.

C. If a Hazardous Environmental Condition is encountered or alleged, ENGINEER shall have the obligation to notify OWNER and, to the extent of applicable Laws and Regulations, appropriate governmental officials.

D. It is acknowledged by both parties that ENGINEER's scope of services does not include any services related to a Hazardous Environmental Condition. In the event ENGINEER or any other party encounters a Hazardous Environmental Condition, ENGINEER may, at its option and without liability for consequential or any other damages, suspend performance of services on the portion of the Project affected thereby until OWNER: (i) retains appropriate specialist consultant(s) or contractor(s) to identify and, as appropriate, abate, remediate, or remove the Hazardous Environmental Condition; and (ii) warrants that the Site is in full compliance with applicable Laws and Regulations.

E. OWNER acknowledges that ENGINEER is performing professional services for OWNER and that ENGINEER is not and shall not be required to become an "arranger," "operator," "generator," or "transporter" of hazardous substances, as defined in the Comprehensive Environmental Response, Compensation, and Liability Act of 1990 (CERCLA), which are or may be encountered at or near the Site in connection with ENGINEER's activities under this Agreement.

F. If ENGINEER's services under this Agreement cannot be performed because of a Hazardous Environmental Condition, the existence of the condition shall justify ENGINEER's terminating this Agreement for cause on 30 days notice.

6.11 Allocation of Risks

A. Indemnification

1. To the fullest extent permitted by law, ENGINEER shall indemnify and hold harmless OWNER, OWNER's officers, directors, partners, and employees from and against any and all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) caused solely by the negligent acts or omissions of ENGINEER or ENGINEER's officers, directors, partners, employees, and ENGINEER's Consultants in the performance and furnishing of ENGINEER's services under this Agreement.

2. To the fullest extent permitted by law, OWNER shall indemnify and hold harmless ENGINEER, ENGINEER's officers, directors, partners, employees, and ENGINEER's Consultants from and against any and all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) caused solely by the negligent acts or omissions of OWNER or OWNER's officers, directors, partners, employees, and OWNER's consultants with respect to this Agreement or the Project.

3. To the fullest extent permitted by law, ENGINEER's total liability to OWNER and anyone claiming by, through, or under OWNER for any cost, loss, or damages caused in part by the negligence of ENGINEER and in part by the negligence of OWNER or any other negligent entity or individual, shall not exceed the percentage share that ENGINEER's negligence bears to the total negligence of OWNER, ENGINEER, and all other negligent entities and individuals.

4. In addition to the indemnity provided under paragraph 6.11.A.2 of this Agreement, and to the fullest

extent permitted by law, OWNER shall indemnify and hold harmless ENGINEER and its officers, directors, partners, employees, and ENGINEER's Consultants from and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) caused by, arising out of or resulting from a Hazardous Environmental Condition, provided that (i) any such cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than completed Work), including the loss of use resulting therefrom, and (ii) nothing in this paragraph 6.11.A.4. shall obligate OWNER to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence or willful misconduct.

5. The indemnification provision of paragraph 6.11.A.1 is subject to and limited by the provisions agreed to by OWNER and ENGINEER in Exhibit I, "Allocation of Risks," if any.

6.12 Notices

A. Any notice required under this Agreement will be in writing, addressed to the appropriate party at its address on the signature page and given personally, or by registered or certified mail postage prepaid, or by a commercial courier service. All notices shall be effective upon the date of receipt.

6.13 Survival

A. All express representations, indemnifications, or limitations of liability included in this Agreement will survive its completion or termination for any reason.

6.14 Severability

A. Any provision or part of the Agreement held to be void or unenforceable under any Laws or Regulations shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon OWNER and ENGINEER, who agree that the Agreement shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

6.15 Waiver

A. Non-enforcement of any provision by either party shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Agreement.

6.16 Headings

A. The headings used in this Agreement are for general reference only and do not have special significance.

ARTICLE 7 - DEFINITIONS

7.01 Defined Terms

A. Wherever used in this Agreement (including the Exhibits hereto) and printed with initial or all capital letters, the terms listed below have the meanings indicated, which are applicable to both the singular and plural thereof:

1. *Addenda*--Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Documents.

2. *Additional Services*--The services to be performed for or furnished to OWNER by ENGINEER in accordance with Exhibit A, Part 2 of this Agreement.

3. *Agreement*--This "Standard Form of Agreement between OWNER and ENGINEER for Professional Services," including those Exhibits listed in Article 8 hereof.

4. *Application for Payment*--The form acceptable to ENGINEER which is to be used by Contractor in requesting progress or final payments for the completion of its Work and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

5. *Asbestos*--Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

6. *Basic Services*--The services to be performed for or furnished to OWNER by ENGINEER in accordance with Exhibit A, Part 1, of this Agreement.

7. *Bid*--The offer or proposal of the bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

8. *Bidding Documents*--The advertisement or invitation to Bid, instructions to bidders, the Bid form and attachments, the Bid bond, if any, the proposed Contract Documents, and all Addenda, if any.

9. *Change Order*--A document recommended by ENGINEER, which is signed by Contractor and OWNER to authorize an addition, deletion or revision in the Work, or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Construction Agreement.

10. *Construction Agreement*--The written instrument which is evidence of the agreement, contained in the Contract Documents, between OWNER and Contractor covering the Work.

11. *Construction Contract*--The entire and integrated written agreement between the OWNER and Contractor concerning the Work.

12. *Construction Cost*--The cost to OWNER of those portions of the entire Project designed or specified by ENGINEER. Construction Cost does not include costs of services of ENGINEER or other design professionals and consultants, cost of land, rights-of-way, or compensation for damages to properties, or OWNER's costs for legal, accounting, insurance counseling or auditing services, or interest and financing charges incurred in connection with the Project, or the cost of other services to be provided by others to OWNER pursuant to Exhibit B of this Agreement. Construction Cost is one of the items comprising Total Project Costs.

13. *Contract Documents*--Documents that establish the rights and obligations of the parties engaged in construction and include the Construction Agreement between OWNER and Contractor, Addenda (which pertain to the Contract Documents), Contractor's Bid (including documentation accompanying the Bid and any post-Bid documentation submitted prior to the notice of award) when attached as an exhibit to the Construction Agreement, the notice to proceed, the bonds, appropriate certifications, the General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Construction Agreement, together with all Written Amendments, Change Orders, Work Change Directives, Field Orders, and ENGINEER's written interpretations and clarifications issued on or after the Effective Date of the Construction Agreement. Approved Shop Drawings and the reports and drawings of subsurface and physical conditions are not Contract Documents.

14. *Contract Price*--The moneys payable by OWNER to Contractor for completion of the Work in accordance with the Contract Documents and as stated in the Construction Agreement.

15. *Contract Times*--The numbers of days or the dates stated in the Construction Agreement to: (i) achieve Substantial Completion, and (ii) complete the Work so that it is ready for final payment as evidenced by ENGINEER's written recommendation of final payment.

16. *Contractor*--An individual or entity with whom OWNER enters into a Construction Agreement.

17. *Correction Period*--The time after Substantial Completion during which Contractor must correct, at no cost to OWNER, any Defective Work, normally one year after the date of Substantial Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee or specific provision of the Contract Documents.

18. *Defective*--An adjective which, when modifying the word Work, refers to Work that is unsatisfactory, faulty, or deficient, in that it does not conform to the Contract Documents, or does not meet the requirements of any inspection, reference standard, test, or approval referred to in the Contract Documents, or has been damaged prior to ENGINEER's recommendation of final payment.

19. *Documents*--Data, reports, Drawings, Specifications, Record Drawings, and other deliverables, whether in printed or electronic media format, provided or furnished in appropriate phases by ENGINEER to OWNER pursuant to this Agreement.

20. *Drawings*--That part of the Contract Documents prepared or approved by ENGINEER which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings are not Drawings as so defined.

21. *Effective Date of the Construction Agreement*--The date indicated in the Construction Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Construction Agreement is signed and delivered by the last of the two parties to sign and deliver.

22. *Effective Date of the Agreement*--The date indicated in this Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

23. *ENGINEER's Consultants*--Individuals or entities having a contract with ENGINEER to furnish services

with respect to this Project as ENGINEER's independent professional associates, consultants, subcontractors, or vendors. The term ENGINEER includes ENGINEER's Consultants.

24. *Field Order*--A written order issued by ENGINEER which directs minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.

25. *General Conditions*-That part of the Contract Documents which sets forth terms, conditions, and procedures that govern the Work to be performed or furnished by Contractor with respect to the Project.

26. *Hazardous Environmental Condition*--The presence at the Site of Asbestos, PCB's, Petroleum, Hazardous Waste, or Radioactive Materials in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto in connection with the Work.

27. *Hazardous Waste*--The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

28. *Laws and Regulations; Laws or Regulations*--Any and all applicable laws, rules, regulations, ordinances, codes, standards, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

29. *PCB's*--Polychlorinated biphenyls.

30. *Petroleum*--Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

31. *Radioactive Materials*--Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

32. *Record Drawings*--The Drawings as issued for construction on which the ENGINEER, upon completion of the Work, has shown changes due to Addenda or Change Orders and other information which ENGINEER considers significant based on record documents furnished by Contractor to ENGINEER and which were annotated by Contractor to show changes made during construction.

33. *Reimbursable Expenses*--The expenses incurred directly by ENGINEER in connection with the performing or furnishing of Basic and Additional Services for the Project for which OWNER shall pay ENGINEER as indicated in Exhibit C.

34. *Resident Project Representative*--The authorized representative of ENGINEER, if any, assigned to assist ENGINEER at the Site during the Construction Phase. The Resident Project Representative will be ENGINEER's agent or employee and under ENGINEER's supervision. As used herein, the term Resident Project Representative includes any assistants of Resident Project Representative agreed to by OWNER. The duties and responsibilities of the Resident Project Representative are as set forth in Exhibit D.

35. *Samples*--Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

36. *Shop Drawings*--All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to ENGINEER to illustrate some portion of the Work.

37. *Site*--Lands or areas indicated in the Contract Documents as being furnished by OWNER upon which the Work is to be performed, rights-of-way and easements for access thereto, and such other lands furnished by OWNER which are designated for use of Contractor.

38. *Specifications*--That part of the Contract Documents consisting of written technical descriptions of materials, equipment, systems, standards, and workmanship as applied to the Work and certain administrative details applicable thereto.

39. *Substantial Completion*--The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of ENGINEER, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

40. *Supplementary Conditions*--That part of the Contract Documents which amends or supplements the General Conditions.

41. *Total Project Costs*--The sum of the Construction Cost, allowances for contingencies, the total costs of services of ENGINEER or other design professionals and consultants, cost of land, rights-of-way, or compensation for damages to properties, or OWNER's costs for legal, accounting, insurance counseling or auditing services, or interest and financing charges incurred in connection with the Project, or the cost of other services to be provided by others to OWNER pursuant to Exhibit B of this Agreement.

42. *Work*--The entire completed construction or the various separately identifiable parts thereof required to be provided under the Contract Documents with respect to this Project. Work includes and is the result of performing or furnishing labor, services, and documentation necessary to produce such construction and furnishing, installing, and incorporating all materials and all equipment into such construction, all as required by the Contract Documents.

43. *Work Change Directive*--A written directive to Contractor issued on or after the Effective Date of the Construction Agreement and signed by OWNER upon recommendation of the ENGINEER, ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change directed or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

44. *Written Amendment*--A written amendment of the Contract Documents signed by OWNER and Contractor on or after the Effective Date of the Construction Agreement and normally dealing with the non-engineering or non-technical rather than strictly construction-related aspects of the Contract Documents.

ARTICLE 8 - EXHIBITS AND SPECIAL PROVISIONS

8.01 Exhibits Included

A. Exhibit A, "ENGINEER's Services," consisting of _____ pages.

B. Exhibit B, "OWNER's Responsibilities," consisting of _____ pages.

C. Exhibit C, "Payments to Engineer for Services and Reimbursable Expenses," consisting of _____ pages.

D. Exhibit D, "Duties, Responsibilities and Limitations of Authority of Resident Project Representative," consisting of _____ pages.

E. Exhibit E, "Notice of Acceptability of Work," consisting of _____ pages.

F. Exhibit F, "Construction Cost Limit," consisting of _____ pages.

G. Exhibit G, "Insurance," consisting of _____ pages.

H. Exhibit H, "Dispute Resolution," consisting of _____ pages.

I. Exhibit I, "Allocation of Risks," consisting of _____ pages.

J. Exhibit J, "Special Provisions," consisting of _____ pages.

8.02 Total Agreement

A. This Agreement (consisting of pages 1 to ____ inclusive, together with the Exhibits identified above) constitutes the entire agreement between OWNER and ENGINEER and supersedes all prior written or oral understandings. This Agreement may only be amended, supplemented, modified, or canceled by a duly executed written instrument.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement, the Effective Date of which is indicated on page 1.

OWNER:	ENGINEER:
_____	_____
By:_____	By:_____
Title:_____	Title:_____
Date Signed:_____	Date Signed:_____
Address for giving notices:	Address for giving notices:
_____	_____
_____	_____
_____	_____
_____	_____
Designated Representative (paragraph 6.02.A):	Designated Representative (paragraph 6.02.A):
_____	_____
Title:_____	Title:_____
Phone Number:_____	Phone Number:_____
Facsimile Number:_____	Facsimile Number:_____
E-Mail Address:_____	E-Mail Address:_____

SUGGESTED FORMAT
(for use with 1910-1, 1996 Edition)

This is **EXHIBIT A**, consisting of _____ pages, referred to in and part of the **Agreement between OWNER and ENGINEER for Professional Services** dated _____, _____.

Initial:
OWNER _____
ENGINEER _____

ENGINEER's Services

Article 1 of the Agreement is amended and supplemented to include the following agreement of the parties. ENGINEER shall provide Basic and Additional Services as set forth below.

PART 1 -- BASIC SERVICES

A1.01 *Study and Report Phase*

A. ENGINEER shall:

1. Consult with OWNER to define and clarify OWNER's requirements for the Project and available data.

2. Advise OWNER as to the necessity of OWNER's providing data or services of the types described in Exhibit B which are not part of ENGINEER's Basic Services, and assist OWNER in obtaining such data and services.

3. Identify, consult with, and analyze requirements of governmental authorities having jurisdiction to approve the portions of the Project designed or specified by ENGINEER, including but not limited to mitigating measures identified in the environmental assessment.

4. Identify and evaluate _____ alternate solutions available to OWNER and, after consultation with OWNER, recommend to OWNER those solutions which in ENGINEER's judgment meet OWNER's requirements for the Project.

5. Prepare a report (the "Report") which will, as appropriate, contain schematic layouts, sketches and conceptual design criteria with appropriate exhibits to indicate the agreed-to requirements, considerations involved, and those alternate solutions available to OWNER which ENGINEER recommends. This Report will be accompanied by ENGINEER's opinion of Total Project Costs for each solution which is so recommended for the Project with each component separately itemized, including the following, which will be separately itemized: opinion of probable Construction Cost, allowances for contingencies and for the estimated total costs of design, professional, and related services provided by ENGINEER and, on the basis of information furnished by OWNER, allowances for other items and services included within the definition of Total Project Costs.

6. Perform or provide the following additional Study and Report Phase tasks or deliverables:

7. Furnish _____ review copies of the Report to OWNER within ___ days of authorization to begin services and review it with OWNER.

8. Revise the Report in response to OWNER's and other parties' comments, as appropriate, and furnish _____ final copies of the revised Report to the OWNER within ___ days after completion of reviewing it with OWNER.

B. ENGINEER's services under the Study and Report Phase will be considered complete on the date when the final copies of the revised Report have been delivered to OWNER.

A1.02 *Preliminary Design Phase*

A. After acceptance by OWNER of the Report, selection by OWNER of a recommended solution and indication of any specific modifications or changes in the scope, extent, character, or design requirements of the Project desired by OWNER, and upon written authorization from OWNER, ENGINEER shall:

1. On the basis of the above acceptance, selection, and authorization, prepare Preliminary Design Phase documents consisting of final design criteria, preliminary drawings, outline specifications and written descriptions of the Project.

2. Provide necessary field surveys and topographic and utility mapping for design purposes. Utility mapping will be based upon information obtained from utility owners.

3. Advise OWNER if additional reports, data, information, or services of the types described in Exhibit B are necessary and assist OWNER in obtaining such reports, data, information, or services.

4. Based on the information contained in the Preliminary Design Phase documents, submit a revised opinion of probable Construction Cost and any adjustments to Total Project Costs known to ENGINEER, which will be itemized as provided in paragraph A1.01.A.5.

5. Perform or provide the following additional Preliminary Design Phase tasks or deliverables:

6. Furnish the Preliminary Design Phase documents to and review them with OWNER.

7. Submit to OWNER ___ final copies of the Preliminary Design Phase documents and revised opinion of probable Construction Cost within ___ days after authorization to proceed with this phase.

B. ENGINEER's services under the Preliminary Design Phase will be considered complete on the date when final copies of the Preliminary Design Phase documents have been delivered to OWNER.

A1.03 *Final Design Phase*

A. After acceptance by OWNER of the Preliminary Design Phase documents and revised opinion of probable Construction Cost as determined in the Preliminary Design Phase, but subject to any OWNER-directed modifications or changes in the scope, extent, character, or design requirements of or for the Project, and upon written authorization from OWNER, ENGINEER shall:

1. On the basis of the above acceptance, direction, and authorization, prepare final Drawings indicating the scope, extent, and character of the Work to be performed and furnished by Contractor. Specifications will be prepared, where appropriate, in general conformance with the 16-division format of the Construction Specifications Institute.

2. Provide technical criteria, written descriptions, and design data for OWNER's use in filing applications for permits from or approvals of governmental authorities having jurisdiction to review or approve the final design of the Project and assist OWNER in consultations with appropriate authorities.

3. Advise OWNER of any adjustments to the opinion of probable Construction Cost and any adjustments to Total Project Costs known to ENGINEER, itemized as provided in paragraph A1.01.A.5.

4. Perform or provide the following additional Final Design Phase tasks or deliverables:

5. Prepare and furnish Bidding Documents for review and approval by OWNER, its legal counsel, and other advisors, as appropriate, and assist OWNER in the preparation of other related documents.

6. Submit ___ final copies of the Bidding Documents and a revised opinion of probable Construction Cost to OWNER within ___ days after authorization to proceed with this phase.

B. In the event that the Work designed or specified by ENGINEER is to be performed or furnished under more than one prime contract, or if ENGINEER's services are to be separately sequenced with the work of one or more prime Contractors (such as in the case of fast-tracking), OWNER and ENGINEER shall, prior to commencement of the Final Design Phase, develop a schedule for performance of ENGINEER's services during the Final Design, Bidding or Negotiating, Construction, and Post-Construction Phases in order to sequence and coordinate properly such services as are applicable to the work under such separate prime contracts. This schedule is to be prepared and included in or become an amendment to Exhibit A whether or not the work under such contracts is to proceed concurrently.

C. The number of prime contracts for Work designed or specified by ENGINEER upon which the ENGINEER's compensation has been established under this Agreement is _____.

D. ENGINEER's services under the Final Design Phase will be considered complete on the date when the submittals required by paragraph A1.03.A.6 have been delivered to OWNER.

A1.04 *Bidding or Negotiating Phase*

A. After acceptance by OWNER of the Bidding Documents and the most recent opinion of probable Construction Cost as determined in the Final Design Phase, and upon written authorization by OWNER to proceed, ENGINEER shall:

1. Assist OWNER in advertising for and obtaining bids or negotiating proposals for the Work and, where applicable, maintain a record of prospective bidders to whom Bidding Documents have been issued, attend pre-Bid conferences, if any, and receive and process Contractor deposits or charges for the Bidding Documents.

2. Issue Addenda as appropriate to clarify, correct, or change the Bidding Documents.

3. Consult with OWNER as to the acceptability of subcontractors, suppliers, and other individuals and entities proposed by Contractor for those portions of the Work as to which such acceptability is required by the Bidding Documents.

4. Perform or provide the following additional Bidding or Negotiating Phase tasks or deliverables:

5. Attend the Bid opening, prepare Bid tabulation sheets, and assist OWNER in evaluating Bids or proposals and in assembling and awarding contracts for the Work.

B. The Bidding or Negotiating Phase will be considered complete upon commencement of the Construction Phase or upon cessation of negotiations with prospective Contractors (except as may be required if Exhibit F is a part of this Agreement).

A1.05 *Construction Phase*

A. Upon successful completion of the Bidding and Negotiating Phase, and upon written authorization from OWNER, ENGINEER shall:

1. *General Administration of Construction Contract.* Consult with OWNER and act as OWNER's representative as provided in the General Conditions. The extent and limitations of the duties, responsibilities and authority of ENGINEER as assigned in said General Conditions shall not be modified, except as ENGINEER may otherwise agree

in writing. All of OWNER's instructions to Contractor will be issued through ENGINEER, who shall have authority to act on behalf of OWNER in dealings with Contractor to the extent provided in this Agreement and said General Conditions except as otherwise provided in writing.

2. *Resident Project Representative (RPR).* Provide the services of an RPR at the Site to assist the ENGINEER and to provide more extensive observation of Contractor's work. Duties, responsibilities, and authority of the RPR are as set forth in Exhibit D. The furnishing of such RPR's services will not extend ENGINEER's responsibilities or authority beyond the specific limits set forth elsewhere in this Agreement.

3. *Selecting Independent Testing Laboratory.* Assist OWNER in the selection of an independent testing laboratory to perform the services identified in paragraph .B2.01.0

4. *Pre-Construction Conference.* Participate in a Pre-Construction Conference prior to commencement of Work at the Site.

5. *Baselines and Benchmarks.* As appropriate, establish baselines and benchmarks for locating the Work which in ENGINEER's judgment are necessary to enable Contractor to proceed.

6. *Visits to Site and Observation of Construction.* In connection with observations of Contractor's work in progress while it is in progress:

a. Make visits to the Site at intervals appropriate to the various stages of construction, as ENGINEER deems necessary, in order to observe as an experienced and qualified design professional the progress and quality of the Work. Such visits and observations by ENGINEER, and the Resident Project Representative, if any, are not intended to be exhaustive or to extend to every aspect of Contractor's work in progress or to involve detailed inspections of Contractor's work in progress beyond the responsibilities specifically assigned to ENGINEER in this Agreement and the Contract Documents, but rather are to be limited to spot checking, selective sampling, and similar methods of general observation of the Work based on ENGINEER's exercise of professional judgment as assisted by the Resident Project Representative, if any. Based on information obtained during such visits and such observations, ENGINEER will determine in general if Contractor's work is proceeding in accordance with the Contract Documents, and ENGINEER shall keep OWNER informed of the progress of the Work.

b. The purpose of ENGINEER's visits to, and representation by the Resident Project Representative, if any, at the Site, will be to enable ENGINEER to better carry out the duties and responsibilities assigned to and undertaken by ENGINEER during the Construction Phase, and, in addition, by the exercise of ENGINEER's efforts as an experienced and qualified design professional, to provide for OWNER a greater degree of confidence that the completed Work will conform in general to the Contract Documents and that the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents has been implemented and preserved by Contractor. ENGINEER shall not, during such visits or as a result of such observations of Contractor's work in progress, supervise, direct, or have control over Contractor's work, nor shall ENGINEER have authority over or responsibility for the means, methods, techniques, sequences, or procedures of construction selected by Contractor, for safety precautions and programs incident to Contractor's work, or for any failure of Contractor to comply with Laws and Regulations applicable to Contractor's furnishing and performing the Work. Accordingly, ENGINEER neither guarantees the performance of any Contractor nor assumes responsibility for any Contractor's failure to furnish and perform its work in accordance with the Contract Documents.

7. *Defective Work.* Recommend to OWNER that Contractor's work be disapproved and rejected while it is in progress if, on the basis of such observations, ENGINEER believes that such work will not produce a completed Project that conforms generally to the Contract Documents or that it will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents.

8. *Clarifications and Interpretations; Field Orders.* Issue necessary clarifications and interpretations of the Contract Documents as appropriate to the orderly completion of Contractor's work. Such clarifications and

interpretations will be consistent with the intent of and reasonably inferable from the Contract Documents. ENGINEER may issue Field Orders authorizing minor variations from the requirements of the Contract Documents.

9. *Change Orders and Work Change Directives.* Recommend Change Orders and Work Change Directives to OWNER, as appropriate, and prepare Change Orders and Work Change Directives as required.

10. *Shop Drawings and Samples.* Review and approve or take other appropriate action in respect to Shop Drawings and Samples and other data which Contractor is required to submit, but only for conformance with the information given in the Contract Documents and compatibility with the design concept of the completed Project as a functioning whole as indicated in the Contract Documents. Such reviews and approvals or other action will not extend to means, methods, techniques, sequences or procedures of construction or to safety precautions and programs incident thereto. ENGINEER has an obligation to meet any Contractor's submittal schedule that has earlier been acceptable to ENGINEER.

11. *Substitutes and "or-equal."* Evaluate and determine the acceptability of substitute or "or-equal" materials and equipment proposed by Contractor, but subject to the provisions of paragraph A2.02.A.2 of this Exhibit A.

12. *Inspections and Tests.* Require such special inspections or tests of Contractor's work as deemed reasonably necessary, and receive and review all certificates of inspections, tests, and approvals required by Laws and Regulations or the Contract Documents. ENGINEER's review of such certificates will be for the purpose of determining that the results certified indicate compliance with the Contract Documents and will not constitute an independent evaluation that the content or procedures of such inspections, tests, or approvals comply with the requirements of the Contract Documents. ENGINEER shall be entitled to rely on the results of such tests.

13. *Disagreements between OWNER and Contractor.* Render formal written decisions on all claims of OWNER and Contractor relating to the acceptability of Contractor's work or the interpretation of the requirements of the Contract Documents pertaining to the execution and progress of Contractor's work. In rendering such decisions, ENGINEER shall be fair and not show partiality to OWNER or Contractor and shall not be liable in connection with any decision rendered in good faith in such capacity.

14. *Applications for Payment.* Based on ENGINEER's observations as an experienced and qualified design professional and on review of Applications for Payment and accompanying supporting documentation:

a. Determine the amounts that ENGINEER recommends Contractor be paid. Such recommendations of payment will be in writing and will constitute ENGINEER's representation to OWNER, based on such observations and review, that, to the best of ENGINEER's knowledge, information and belief, Contractor's work has progressed to the point indicated, the quality of such work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents and to any other qualifications stated in the recommendation), and the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is ENGINEER's responsibility to observe Contractor's work. In the case of unit price work, ENGINEER's recommendations of payment will include final determinations of quantities and classifications of Contractor's work (subject to any subsequent adjustments allowed by the Contract Documents). The responsibilities of ENGINEER contained in paragraph A1.05.A.6.a are expressly subject to the limitations set forth in paragraph A1.05.A.6.b and other express or general limitations in this Agreement and elsewhere.

b. By recommending any payment, ENGINEER shall not thereby be deemed to have represented that observations made by ENGINEER to check the quality or quantity of Contractor's work as it is performed and furnished have been exhaustive, extended to every aspect of Contractor's work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to ENGINEER in this Agreement and the Contract Documents. Neither ENGINEER's review of Contractor's work for the purposes of recommending payments nor ENGINEER's recommendation of any payment including final payment will impose on ENGINEER responsibility to supervise, direct, or control Contractor's work in progress or for the means, methods, techniques, sequences, or procedures of construction or safety precautions or programs incident thereto, or

Contractor's compliance with Laws and Regulations applicable to Contractor's furnishing and performing the Work. It will also not impose responsibility on ENGINEER to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or to determine that title to any portion of the work in progress, materials, or equipment has passed to OWNER free and clear of any liens, claims, security interests, or encumbrances, or that there may not be other matters at issue between OWNER and Contractor that might affect the amount that should be paid.

15. *Contractor's Completion Documents.*

a. Receive and review maintenance and operating instructions, schedules, and guarantees.

b. Receive bonds, certificates, or other evidence of insurance not previously submitted and required by the Contract Documents, certificates of inspection, tests and approvals, Shop Drawings, Samples and other data approved as provided under paragraph A1.05.A.10, and the annotated record documents which are to be assembled by Contractor in accordance with the Contract Documents to obtain final payment. The extent of such ENGINEER's review will be limited as provided in paragraph A1.05.A.10.

c. ENGINEER shall transmit these documents to OWNER.

16. *Substantial Completion.* Promptly after notice from Contractor that Contractor considers the entire Work ready for its intended use, in company with OWNER and Contractor, conduct an inspection to determine if the Work is Substantially Complete. If after considering any objections of OWNER, ENGINEER considers the Work Substantially Complete, ENGINEER shall deliver a certificate of Substantial Completion to OWNER and Contractor.

17. *Additional Tasks.* Perform or provide the following additional Construction Phase tasks or deliverables:

18. *Final Notice of Acceptability of the Work.* Conduct a final inspection to determine if the completed Work of Contractor is acceptable so that ENGINEER may recommend, in writing, final payment to Contractor. Accompanying the recommendation for final payment, ENGINEER shall also provide a notice in the form attached hereto as Exhibit E (the "Notice of Acceptability of Work") that the Work is acceptable (subject to the provisions of paragraph A1.05.A.14.b) to the best of ENGINEER's knowledge, information, and belief and based on the extent of the services provided by ENGINEER under this Agreement.

B. *Duration of Construction Phase.* The Construction Phase will commence with the execution of the first Construction Agreement for the Project or any part thereof and will terminate upon written recommendation by ENGINEER for final payment to Contractors. If the Project involves more than one prime contract as indicated in paragraph A1.03.C, Construction Phase services may be rendered at different times in respect to the separate contracts.

C. *Limitation of Responsibilities.* ENGINEER shall not be responsible for the acts or omissions of any Contractor, or of any of their subcontractors, suppliers, or of any other individual or entity performing or furnishing any of the Work. ENGINEER shall not be responsible for failure of any Contractor to perform or furnish the Work in accordance with the Contract Documents.

A1.06 *Post-Construction Phase*

A. Upon written authorization from OWNER, ENGINEER, during the Post-Construction Phase, shall:

1. Provide assistance in connection with the testing and adjusting of Project equipment or systems.

2. Assist OWNER in training OWNER's staff to operate and maintain Project, equipment, and systems.

3. Assist OWNER in developing procedures for control of the operation and maintenance of, and record keeping for Project equipment and systems.

4. Together with OWNER, visit the Project to observe any apparent defects in the Work, assist OWNER in consultations and discussions with Contractor concerning correction of any such defects, and make recommendations as to replacement or correction of Defective Work, if present.

5. Perform or provide the following additional Post-Construction Phase tasks or deliverables:

6. In company with OWNER or OWNER's representative, provide an inspection of the Project within one month before the end of the Correction Period to ascertain whether any portion of the Work is subject to correction.

B. The Post-Construction Phase services may commence during the Construction Phase and, if not otherwise modified in this Exhibit A, will terminate at the end of the Correction Period.

PART 2 -- ADDITIONAL SERVICES

A2.01 *Additional Services Requiring OWNER's Authorization in Advance*

A. If authorized in writing by OWNER, ENGINEER shall furnish or obtain from others Additional Services of the types listed below. These services will be paid for by OWNER as indicated in Article 4 of the Agreement.

1. Preparation of applications and supporting documents (in addition to those furnished under Basic Services) for private or governmental grants, loans or advances in connection with the Project; preparation or review of environmental assessments and impact statements; review and evaluation of the effects on the design requirements for the Project of any such statements and documents prepared by others; and assistance in obtaining approvals of authorities having jurisdiction over the anticipated environmental impact of the Project.

2. Services to make measured drawings of or to investigate existing conditions or facilities, or to verify the accuracy of drawings or other information furnished by OWNER.

3. Services resulting from significant changes in the scope, extent, or character of the portions of the Project designed or specified by ENGINEER or its design requirements including, but not limited to, changes in size, complexity, OWNER's schedule, character of construction, or method of financing; and revising previously accepted studies, reports, Drawings, Specifications, or Contract Documents when such revisions are required by changes in Laws and Regulations enacted subsequent to the Effective Date of this Agreement or are due to any other causes beyond ENGINEER's control.

4. Services resulting from OWNER's request to evaluate additional Study and Report Phase alternative solutions beyond those identified in paragraph A1.01.A.4.

5. Services required as a result of OWNER's providing incomplete or incorrect Project information with respect to Exhibit B.

6. Providing renderings or models for OWNER's use.

7. Undertaking investigations and studies including, but not limited to, detailed consideration of operations, maintenance, and overhead expenses; the preparation of feasibility studies, cash flow and economic evaluations, rate schedules, and appraisals; assistance in obtaining financing for the Project; evaluating processes available for licensing, and assisting OWNER in obtaining process licensing; detailed quantity surveys of materials, equipment, and labor; and audits or inventories required in connection with construction performed by OWNER.

8. Furnishing services of ENGINEER's Consultants for other than Basic Services.

9. Services attributable to more prime construction contracts than specified in paragraph A1.03.C.

10. Services during out-of-town travel required of ENGINEER other than for visits to the Site or OWNER's office.

11. Preparing for, coordinating with, participating in and responding to structured independent review processes, including, but not limited to, construction management, cost estimating, project peer review, value engineering, and constructibility review requested by OWNER; and performing or furnishing services required to revise studies, reports, Drawings, Specifications, or other Bidding Documents as a result of such review processes.

12. Preparing additional Bidding Documents or Contract Documents for alternate bids or prices requested by OWNER for the Work or a portion thereof.

13. Determining the acceptability of substitute materials and equipment proposed during the Bidding or Negotiating Phase when substitution prior to the award of contracts is allowed by the Bidding Documents.

14. Assistance in connection with Bid protests, rebidding, or renegotiating contracts for construction, materials, equipment, or services, except when such assistance is required by Exhibit F.

15. Providing construction surveys and staking to enable Contractor to perform its work other than as required under paragraph A1.05.A.5, and any type of property surveys or related engineering services needed for the transfer of interests in real property; and providing other special field surveys.

16. Providing Construction Phase services beyond the Contract Times set forth in Exhibit C.

17. Providing assistance in resolving any Hazardous Environmental Condition in compliance with current Laws and Regulations.

18. Preparing and furnishing to OWNER Record Drawings showing appropriate record information based on Project annotated record documents received from Contractor.

19. Preparation of operation and maintenance manuals.

20. Preparing to serve or serving as a consultant or witness for OWNER in any litigation, arbitration or other dispute resolution process related to the Project.

21. Providing more extensive services required to enable ENGINEER to issue notices or certifications requested by OWNER under paragraph 6.01.G of the Agreement.

22. Other services performed or furnished by ENGINEER not otherwise provided for in this Agreement.

A2.02 *Required Additional Services*

A. ENGINEER shall perform or furnish, without requesting or receiving specific advance authorization from OWNER, the Additional Services of the types listed below. ENGINEER shall advise OWNER in writing promptly after starting any such Additional Services.

1. Services in connection with Work Change Directives and Change Orders to reflect changes requested by OWNER so as to make the compensation commensurate with the extent of the Additional Services rendered.

2. Services in making revisions to Drawings and Specifications occasioned by the acceptance of substitute materials or equipment other than "or-equal" items; and services after the award of the Construction Agreement in evaluating and determining the acceptability of a substitution which is found to be inappropriate for the Project or an excessive number of substitutions.

3. Services resulting from significant delays, changes, or price increases occurring as a direct or indirect result of materials, equipment, or energy shortages.

4. Additional or extended services during construction made necessary by (1) emergencies or acts of God endangering the Work, (2) an occurrence of a Hazardous Environmental Condition, (3) Work damaged by fire or other cause during construction, (4) a significant amount of defective, neglected, or delayed work by Contractor, (5) acceleration of the progress schedule involving services beyond normal working hours, or (6) default by Contractor.

5. Services (other than Basic Services during the Post-Construction Phase) in connection with any partial utilization of any part of the Work by OWNER prior to Substantial Completion.

6. Evaluating an unreasonable claim or an excessive number of claims submitted by Contractor or others in connection with the Work.

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This is **EXHIBIT B**, consisting of _____ pages, referred to in and part of the **Agreement between OWNER and ENGINEER for Professional Services** dated _____, _____.

Initial:
OWNER _____
ENGINEER_____

OWNER's Responsibilities

Article 2 of the Agreement is amended and supplemented to include the following agreement of the parties.

B2.01 In addition to other responsibilities of OWNER as set forth in this Agreement, OWNER shall:

A. Provide ENGINEER with all criteria and full information as to OWNER's requirements for the Project, including design objectives and constraints, space, capacity and performance requirements, flexibility, and expandability, and any budgetary limitations; and furnish copies of all design and construction standards which OWNER will require to be included in the Drawings and Specifications; and furnish copies of OWNER's standard forms, conditions, and related documents for ENGINEER to include in the Bidding Documents, when applicable.

B. Furnish to ENGINEER any other available information pertinent to the Project including reports and data relative to previous designs, or investigation at or adjacent to the Site.

C. Following ENGINEER's assessment of initially-available Project information and data and upon ENGINEER's request, furnish or otherwise make available such additional Project related information and data as is reasonably required to enable ENGINEER to complete its Basic and Additional Services. Such additional information or data would generally include the following:

1. Property descriptions.

2. Zoning, deed, and other land use restrictions.

3. Property, boundary, easement, right-of-way, and other special surveys or data, including establishing relevant reference points.

4. Explorations and tests of subsurface conditions at or contiguous to the Site, drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site, or hydrographic surveys, with appropriate professional interpretation thereof.

5. Environmental assessments, audits, investigations and impact statements, and other relevant environmental or cultural studies as to the Project, the Site, and adjacent areas.

6. Data or consultations as required for the Project but not otherwise identified in the Agreement or the Exhibits thereto.

D. Give prompt written notice to ENGINEER whenever OWNER observes or otherwise becomes aware of a Hazardous Environmental Condition or of any other development that affects the scope or time of performance of ENGINEER's services, or any defect or nonconformance in ENGINEER's services or in the work of any Contractor.

E. Authorize ENGINEER to provide Additional Services as set forth in Part 2 of Exhibit A of the Agreement as required.

F. Arrange for safe access to and make all provisions for ENGINEER to enter upon public and private property as required for ENGINEER to perform services under the Agreement.

G. Examine all alternate solutions, studies, reports, sketches, Drawings, Specifications, proposals, and other documents presented by ENGINEER (including obtaining advice of an attorney, insurance counselor, and other advisors or consultants as OWNER deems appropriate with respect to such examination) and render in writing timely decisions pertaining thereto.

H. Provide reviews, approvals, and permits from all governmental authorities having jurisdiction to approve all phases of the Project designed or specified by ENGINEER and such reviews, approvals, and consents from others as may be necessary for completion of each phase of the Project.

I. Provide, as required for the Project:

1. Accounting, bond and financial advisory, independent cost estimating, and insurance counseling services.

2. Legal services with regard to issues pertaining to the Project as OWNER requires, Contractor raises, or ENGINEER reasonably requests.

3. Such auditing services as OWNER requires to ascertain how or for what purpose Contractor has used the moneys paid.

4. Placement and payment for advertisement for Bids in appropriate publications.

J. Advise ENGINEER of the identity and scope of services of any independent consultants employed by OWNER to perform or furnish services in regard to the Project, including, but not limited to, cost estimating, project peer review, value engineering, and constructibility review.

K. Furnish to ENGINEER data as to OWNER's anticipated costs for services to be provided by others for OWNER so that ENGINEER may make the necessary calculations to develop and periodically adjust ENGINEER's opinion of Total Project Costs.

L. If OWNER designates a construction manager or an individual or entity other than, or in addition to, ENGINEER to represent OWNER at the Site, define and set forth as an attachment to this Exhibit B the duties, responsibilities, and limitations of authority of such other party and the relation thereof to the duties, responsibilities, and authority of ENGINEER.

M. If more than one prime contract is to be awarded for the Work designed or specified by ENGINEER, designate a person or entity to have authority and responsibility for coordinating the activities among the various prime Contractors, and define and set forth the duties, responsibilities, and limitations of authority of such individual or entity and the relation thereof to the duties, responsibilities, and authority of ENGINEER as an attachment to this Exhibit B that is to be mutually agreed upon and made a part of this Agreement before such services begin.

N. Attend the pre-bid conference, bid opening, pre-construction conferences, construction progress and other job related meetings, and Substantial Completion and final payment inspections.

O. Provide the services of an independent testing laboratory to perform all inspections, tests, and approvals of Samples, materials, and equipment required by the Contract Documents, or to evaluate the performance of materials, equipment, and facilities of OWNER, prior to their incorporation into the Work with appropriate professional interpretation thereof.

P. Provide inspection or monitoring services by an individual or entity other than ENGINEER (and disclose the identity of such individual or entity to ENGINEER) as OWNER determines necessary to verify:

1. That Contractor is complying with any Laws and Regulations applicable to Contractor's performing and furnishing the Work.

2. That Contractor is taking all necessary precautions for safety of persons or property and complying with any special provisions of the Contract Documents applicable to safety.

Q. Provide ENGINEER with the findings and reports generated by the entities providing services pursuant to paragraphs B2.01.O and P.

R. Perform or provide the following additional services:

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Initial:
OWNER _____
ENGINEER_____

Payments to ENGINEER for Services and Reimbursable Expenses

Article 4 of the Agreement is amended and supplemented to include the following agreement of the parties:

ARTICLE 4 -- PAYMENTS TO THE ENGINEER

C4.01 *For Basic Services Having A Determined Scope -- Lump Sum Method of Payment*

A. OWNER shall pay ENGINEER for Basic Services set forth in Exhibit A, except for services of ENGINEER's Resident Project Representative and Post-Construction Phase services, if any, as follows:

1. A Lump Sum amount of $_____ based on the following assumed distribution of compensation:

a. Study and Report Phase $_____
b. Preliminary Design Phase $_____
c. Final Design Phase $_____
d. Bidding and Negotiating Phase $_____
e. Construction Phase $_____

2. ENGINEER may alter the distribution of compensation between individual phases noted herein to be consistent with services actually rendered, but shall not exceed the total Lump Sum amount unless approved in writing by the OWNER.

3. The Lump Sum includes compensation for ENGINEER's services and services of ENGINEER's Consultants, if any. Appropriate amounts have been incorporated in the Lump Sum to account for labor, overhead, profit, and Reimbursable Expenses.

4. The portion of the Lump Sum amount billed for ENGINEER's services will be based upon ENGINEER's estimate of the proportion of the total services actually completed during the billing period to the Lump Sum.

5. The Lump Sum is conditioned on Contract Times to complete the Work not exceeding _____ months. Should the Contract Times to complete the Work be extended beyond this period, the total compensation to ENGINEER shall be appropriately adjusted.

6. If more prime contracts are awarded for Work designed or specified by ENGINEER for this Project than identified in Exhibit A, the ENGINEER shall be compensated an additional amount equal to $_____ for all Basic Services for each prime contract added.

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Initial:
OWNER _____
ENGINEER_____

Payments to ENGINEER for Services and Reimbursable Expenses

Article 4 of the Agreement is amended and supplemented to include the following agreement of the parties:

ARTICLE 4 -- PAYMENTS TO THE ENGINEER --

C4.01 *For Basic Services Having A Determined Scope -- Standard Hourly Rates Method of Payment*

A. OWNER shall pay ENGINEER for Basic Services set forth in Exhibit A, except for services of ENGINEER's Resident Project Representative and Post-Construction Phase services, if any, as follows:

1. An amount equal to the cumulative hours charged to the Project by each class of ENGINEER's employees times Standard Hourly Rates for each applicable billing class for all services performed on the Project, plus Reimbursable Expenses and ENGINEER's Consultant's charges, if any.

2. ENGINEER's Reimbursable Expenses Schedule and Standard Hourly Rates are attached to this Exhibit C as Appendices 1 and 2.

3. The total compensation for services under paragraph C4.01 is estimated to be $_____ based on the following assumed distribution of compensation:

a. Study and Report Phase $_____
b. Preliminary Design Phase $_____
c. Final Design Phase $_____
d. Construction Phase $_____

4. ENGINEER may alter the distribution of compensation between individual phases of the work noted herein to be consistent with services actually rendered, but shall not exceed the total estimated compensation amount unless approved in writing by OWNER.

5. The total estimated compensation for ENGINEER's services included in the breakdown by phases as noted in paragraph 4.01.A.3 incorporates all labor, overhead, profit, Reimbursable Expenses and ENGINEER's Consultant's charges.

6. The amounts billed for ENGINEER's services under paragraph C4.01 will be based on the cumulative hours charged to the Project during the billing period by each class of ENGINEER's employees times Standard Hourly Rates for each applicable billing class, plus Reimbursable Expenses and ENGINEER's Consultant's charges.

7. The Standard Hourly Rates and Reimbursable Expenses Schedule will be adjusted annually (as of _____) to reflect equitable changes in the compensation payable to ENGINEER.

8. The Standard Hourly Rates Method of Payment is conditioned on Contract Times to complete the Work not exceeding _____ months. Should the Contract Times to complete the Work be extended beyond this period, the total compensation to ENGINEER shall be appropriately adjusted.

9. If more prime contracts are awarded for Work designed or specified by ENGINEER for this Project than identified in Exhibit A, the ENGINEER shall be compensated an additional amount equal to $_____ for all Basic Services for each prime contract added.

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Initial:
OWNER _____
ENGINEER_____

Payments to ENGINEER for Services and Reimbursable Expenses

Article 4 of the Agreement is amended and supplemented to include the following agreement of the parties:

ARTICLE 4 -- PAYMENTS TO THE ENGINEER --

C4.01 *For Basic Services Having A Determined Scope -- Percentage of Construction Cost Method of Payment*

A. OWNER shall pay ENGINEER for Basic Services set forth in Exhibit A, except for services of ENGINEER's Resident Project Representative and Post-Construction Phase services, if any, as follows:

1. *General.* An amount equal to _____percent of the Construction Cost. This amount includes compensation for ENGINEER's Services and services of ENGINEER's Consultants, if any. The percentage of Construction Cost noted herein accounts for labor, overhead, profit, and Reimbursable Expenses. The total compensation for services under paragraph C4.01 is estimated to be $_____.

2. As a basis for payment to ENGINEER, Construction Cost will be based on one or more of the following determinations with precedence in the order listed for Work designed or specified by ENGINEER:

a. For Work designed or specified and incorporated in the completed Project, the actual final cost of the work performed by Contractor and paid by OWNER.

b. For Work designed or specified but not constructed, the lowest bona fide Bid received from a qualified bidder for such Work; or, if the Work is not Bid, the lowest bona fide negotiated proposal for such Work.

c. For Work designed or specified but not constructed upon which no such Bid or proposal is received, ENGINEER's most recent opinion of probable Construction Cost.

d. Labor furnished by OWNER for the Project will be included in the Construction Cost at current market rates including a reasonable allowance for overhead and profit. Materials and equipment furnished by OWNER will be included at current market prices.

e. No deduction is to be made from ENGINEER's compensation on account of any penalty, liquidated damages, or other amounts withheld from payments to Contractor(s).

3. Progress payments:

a. The portion of the amounts billed for ENGINEER's services which is on account of the Percentage of Construction Cost will be based upon ENGINEER's estimate of the proportion of the total services actually completed during the billing period to the Percentage of Construction Cost.

b. Upon conclusion of each phase of Basic Services, OWNER shall pay such additional amount, if any, as may be necessary to bring total compensation paid during such phase on account of the percentage of Construction Cost to the following estimated percentages of total compensation payable on account of the percentage of Construction Cost for all phases of Basic Services:

Study and Report Phase	_____%
Preliminary Design Phase	_____%
Final Design Phase	_____%
Bidding or Negotiating Phase	_____%
Construction Phase	_____%
	100%

c. ENGINEER may alter the distribution of compensation between individual phases of the work noted herein but shall not exceed the total percent fee unless approved in writing by the OWNER.

4. ENGINEER's estimated total compensation is conditioned on Contract Times to complete the Work not exceeding _____ months. Should the Contract Times to complete the Work be extended beyond this period, the total compensation to EINGINEER shall be appropriately adjusted.

5. If more prime contracts are awarded for Work designed or specified by ENGINEER for the Project than identified in Exhibit A, ENGINEER shall be compensated an additional amount equal to _____ percent of the Construction Cost for all Basic Services for each prime contract added.

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Initial:
OWNER _____
ENGINEER_____

Payments to ENGINEER for Services and Reimbursable Expenses

Article 4 of the Agreement is amended and supplemented to include the following agreement of the parties:

ARTICLE 4 -- PAYMENTS TO THE ENGINEER

C4.01 *For Basic Services Having A Determined Scope -- Direct Labor Costs Times a Factor Method of Payment*

A. OWNER shall pay ENGINEER for Basic Services set forth in Exhibit A, except for services of ENGINEER's Resident Project Representative and Post-Construction Phase services, if any, as follows:

1. An amount equal to ENGINEER's Direct Labor Costs times a Factor of _____ for the services of ENGINEER's employees engaged on the Project, plus Reimbursable Expenses, estimated to be $_____, and ENGINEER's Consultant's charges, if any, estimated to be $_____.

2. ENGINEER's Reimbursable Expenses Schedule is attached to this Exhibit C as Appendix 1.

3. The total compensation for services under paragraph C4.01 is estimated to be $_____ based on the following assumed distribution of compensation:

a. Study and Report Phase $_____
b. Preliminary Design Phase $_____
c. Final Design Phase $_____
d. Construction Phase $_____

4. ENGINEER may alter the distribution of compensation between individual phases of the work noted herein to be consistent with services actually rendered, but shall not exceed the total compensation amount unless approved in writing by OWNER.

5. The total estimated compensation for ENGINEER'S services included in the breakdown by phases as noted in paragraph 4.01.A.3, incorporates all labor, overhead, profit, Reimbursable Expenses, and ENGINEER's Consultant's charges.

6. If more prime contracts are awarded for Work designed or specified by ENGINEER for this Project than identified in Exhibit A, the ENGINEER shall be compensated an additional amount equal to $_____ for all Basic Services for each prime contract added.

7. The portion of the amounts billed for ENGINEER's services which are related to services rendered on a Direct Labor Costs times a Factor basis will be billed based on the applicable Direct Labor Costs for the cumulative hours charged to the Project by ENGINEER's principals and employees multiplied by the above-designated Factor, plus Reimbursable Expenses and ENGINEER's Consultant's charges incurred during the billing period.

8. The estimated total compensation is conditioned on Contract Times to complete the Work not exceeding _____ months. Should the Contract Times to complete the Work be extended beyond this period, total compensation to ENGINEER shall be appropriately adjusted.

9. Direct Labor Costs means salaries and wages paid to employees but does not include payroll related costs or benefits.

10. The Direct Labor Costs and the Factor applied to Direct Labor Costs will be adjusted annually (as of _____) to reflect equitable changes to the compensation payable to ENGINEER.

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Initial:
OWNER _____
ENGINEER_____

Payments to ENGINEER for Services and Reimbursable Expenses

Article 4 of the Agreement is amended and supplemented to include the following agreement of the parties:

ARTICLE 4 -- PAYMENTS TO THE ENGINEER

C4.01 *For Basic Services Having A Determined Scope -- Direct Labor Costs Plus Overhead Plus a Fixed Fee Method of Payment*

A. OWNER shall pay ENGINEER for Basic Services set forth in Exhibit A, except for services of ENGINEER's Resident Project Representative and Post-Construction Phase services, if any, as follows:

1. An amount equal to ENGINEER's Direct Labor Costs plus overhead for the services of ENGINEER's employees engaged directly on the Project, plus Reimbursable Expenses estimated to be $_____, plus ENGINEER's Consultant's charges, if any, estimated to be $_____, plus a fixed fee of $_____.

2. ENGINEER's Reimbursable Expenses Schedule is attached to this Exhibit C as Appendix 1.

3. The total compensation for services under paragraph C4.01 is estimated to be $_____ based on the following assumed distribution of compensation:

a. Study and Report Phase $_____
b. Preliminary Design Phase $_____
c. Final Design Phase $_____
d. Construction Phase $_____

4. ENGINEER may alter the distribution of compensation between individual phases of the work noted herein to be consistent with services actually rendered, but shall not exceed the total compensation amount unless approved in writing by OWNER.

5. The total estimated compensation for ENGINEER'S services, included in the breakdown by phases as noted in paragraph 4.01.A.3, incorporates all labor, overhead, profit, Reimbursable Expenses, and ENGINEER's Consultant's charges.

6. If more prime contracts are awarded for Work designed or specified by ENGINEER for this Project than identified in Exhibit A, the ENGINEER shall be compensated an additional amount equal to $_____ for all Basic Services for each prime contract added.

7. The portion of the amounts billed for ENGINEER's services will be based on the applicable Direct Labor Costs for the cumulative hours charged to the Project during the billing period by ENGINEER's employees plus overhead, Reimbursable Expenses, ENGINEER's Consultant's charges and the proportionate portion of the fixed fee.

8. The estimated total compensation is conditioned on Contract Times to complete the Work not exceeding _____ months. Should the Contract Times to complete the Work be extended beyond this period, the total compensation to ENGINEER shall be appropriately adjusted.

9. Direct Labor Costs means salaries and wages paid to employees but does not include payroll-related costs or benefits.

10. Overhead includes the cost of customary and statutory benefits including, but not limited to, social security contributions, unemployment, excise and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation, and holiday pay applicable thereto; the cost of general and administrative overhead which includes salaries and wages of employees engaged in business operations not directly chargeable to projects, plus non-Project operating costs, including but not limited to, business

taxes, legal, rent, utilities, office supplies, insurance, and other operating costs. Overhead shall be computed as percentage of Direct Labor Costs. Fixed fee is the lump sum amount paid to ENGINEER by OWNER as margin or profit and will only be adjusted by an amendment to this agreement.

11. Direct Labor Costs and Overhead applied to Direct Labor Costs will be adjusted annually (as of _____) to reflect equitable changes in the compensation payable to ENGINEER.

SUGGESTED FORMAT
(for use with 1910-1, 1996 Edition)

This is **EXHIBIT C**, consisting of _____ pages, referred to in and part of the **Agreement between OWNER and ENGINEER for Professional Services** dated _____, _____.

Initial:
OWNER _____
ENGINEER_____

Payments to ENGINEER for Services and Reimbursable Expenses

Article 4 of the Agreement is amended and supplemented to include the following agreement of the parties:

ARTICLE 4 -- PAYMENTS TO THE ENGINEER

C4.01 *For Basic Services Having A Determined Scope -- Salary Costs Times a Factor Method of Payment*

A. OWNER shall pay ENGINEER for Basic Services set forth in Exhibit A, except for services of ENGINEER's Resident Project Representative, and Post-Construction Phase services, if any, as follows:

1. An amount equal to ENGINEER's Salary Costs times a Factor of _____ for all Basic Services by principals and employees engaged directly on the Project, plus Reimbursable Expenses, estimated to be $_____, and ENGINEER's Consultant's charges, if any, estimated to be $_____.

2. ENGINEER's Reimbursable Expenses Schedule is attached to this Exhibit C as Appendix 1.

3. The total compensation for services under paragraph C4.01 is estimated to be $_____ based on the following assumed distribution of compensation:

a. Study and Report Phase $_____
b. Preliminary Design Phase $_____
c. Final Design Phase $_____
d. Construction Phase $_____

4. ENGINEER may alter the distribution of compensation between individual phases of the work noted herein to be consistent with services actually rendered, but shall not exceed the total compensation amount unless approved in writing by OWNER.

5. The total compensation for ENGINEER'S services, included in the breakdown by phases as noted in paragraph 4.01.A.3, incorporates all labor, overhead, profit, Reimbursable Expenses, and ENGINEER's Consultant's charges.

6. If more prime contracts are awarded for Work designed or specified by ENGINEER for this Project than identified in Exhibit A, the Engineer shall be compensated an additional amount equal to $_____ for all Basic Services for each prime contract added.

7. The portion of the amounts billed for ENGINEER's services will be based on the applicable Salary Costs for the cumulative hours charged to the Project incurred during the billing period by ENGINEER's principals and employees multiplied by the above designated factor, plus Reimbursable Expenses and ENGINEER's Consultant's charges.

8. The estimated total compensation is conditioned on Contract Times to complete the Work not exceeding _____ months. Should the Contract Times to complete the Work be extended beyond this period, payments to ENGINEER shall be appropriately adjusted.

9. Salary Costs means salaries and wages paid to ENGINEER's employees plus the cost of customary and statutory benefits including, but not limited to, social security contributions, unemployment, excise and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation, and holiday pay applicable thereto.

10. The Salary Costs and the Factor applied to Salary Costs will be adjusted annually (as of _____) to reflect equitable changes in the compensation payable to ENGINEER.

C4.02 *For Basic Services Having An Undetermined Scope -- Standard Hourly Rates Method of Payment*

A. OWNER shall pay ENGINEER for Basic Services having an undetermined scope as follows:

1. *Resident Project Representative Services.* For services of ENGINEER's Resident Project Representative, if any, under paragraph A1.05A.2.a of Exhibit A, an amount equal to the cumulative hours charged to the Project by each class of ENGINEER's employees times Standard Hourly Rates for each applicable billing class for all Resident Project Representative services performed on the Project, plus Reimbursable Expenses and ENGINEER's Consultant's charges, if any. The total compensation under this paragraph is estimated to be $_____ based upon Contract Times as set forth in paragraph C4.01.

2. *Post-Construction Phase Services.* For Post-Construction Phase services under paragraph A1.06 of Exhibit A, an amount equal to the cumulative hours charged to the Project by each class of ENGINEER's employees times Standard Hourly Rates for each applicable billing class for all services performed on the Project, plus Reimbursable Expenses and ENGINEER's Consultant's charges, if any. The total compensation under this paragraph is estimated to be $_____.

C4.03 *For Additional Services*

A. OWNER shall pay ENGINEER for Additional Services as follows:

1. *General.* For services of ENGINEER's employees engaged directly on the Project pursuant to paragraph A2.01 or A2.02 of Exhibit A, except for services as a consultant or witness under paragraph A2.01.A.20, an amount equal to the cumulative hours charged to the Project by each class of ENGINEER's employees times Standard Hourly Rates for each applicable billing class for all Additional Services performed on the Project, plus Reimbursable Expenses and ENGINEER's Consultant's charges, if any.

2. *Serving as a Witness.* For services performed by ENGINEER's employees as witnesses giving testimony in any litigation, arbitration, or other legal or administrative proceeding under paragraph A2.01.A.20, at the rate of $_____ per day or any portion thereof (but compensation for time spent in preparing to testify in any such litigation, arbitration, or proceeding will be on the basis provided in paragraph C4.03.A.1). Compensation for ENGINEER's Consultants for such services will be on the basis provided in paragraph C4.06.

C4.04 *For Reimbursable Expenses*

A. When not included in compensation for Basic Services under paragraph C4.01, OWNER shall pay ENGINEER for Reimbursable Expenses at the rates set forth in Appendix 1 to this Exhibit C.

B. Reimbursable Expenses include the following categories: transportation and subsistence incidental thereto; obtaining bids or proposals from Contractor(s); providing and maintaining field office facilities including furnishings and utilities; subsistence and transportation of Resident Project Representative and their assistants; toll telephone calls and telegrams; reproduction of reports, Drawings, Specifications, Bidding Documents, and similar Project-related items in addition to those required under Exhibit A, and, if authorized in advance by OWNER, overtime work requiring higher than regular rates. In addition, if authorized in advance by OWNER, Reimbursable Expenses will also include expenses incurred for computer time and the use of other highly specialized equipment.

C. The amounts payable to ENGINEER for Reimbursable Expenses will be the Project-related internal expenses actually incurred or allocated by ENGINEER, plus all invoiced external Reimbursable Expenses allocable to the Project, the latter multiplied by a Factor of _____.

D. The Reimbursable Expenses Schedule will be adjusted annually (as of _____) to reflect equitable changes in the compensation payable to ENGINEER.

C4.05 *Standard Hourly Rates*

A. Standard Hourly Rates are set forth in Appendix 2 to this Exhibit C and include salaries and wages paid to personnel in each billing class plus the cost of customary and statutory benefits, general and administrative overhead, non-project operating costs, and operating margin or profit.

B. The Standard Hourly Rates will be adjusted annually (as of _____) to reflect equitable changes in the compensation payable to ENGINEER.

C4.06 *For ENGINEER's Consultant's Charges*

A. Whenever compensation to ENGINEER herein is stated to include charges of ENGINEER's Consultants, those charges shall be the amounts billed by ENGINEER's Consultants to ENGINEER times a Factor of _____.

C4.07 *Factors*

A. The external Reimbursable Expenses and ENGINEER's Consultant's Factors include ENGINEER's overhead and profit associated with ENGINEER's responsibility for the administration of such services and costs.

C4.08 *Other Provisions Concerning Payment*

A. *Progress Payments.* The portion of the amounts billed for ENGINEER's services which are related to the services identified in paragraphs C4.02 and C4.03, will be during the billing period based on the cumulative hours charged to the Project by each class of ENGINEER's employees times the Standard Hourly Rate for each class plus Reimbursable Expenses and ENGINEER's Consultant's charges, if any.

B. *Extended Contract Times.* Should the Contract Times to complete the Work be extended beyond the period identified in paragraph C4.01, payment for ENGINEER's services shall be continued based on the Standard Hourly Rates Method of Payment.

C. *Estimated Compensation Amounts*

1. ENGINEER's estimate of the amounts that will become payable for Basic Services are only estimates for planning purposes, are not binding on the parties, and are not the minimum or maximum amounts payable to ENGINEER under the Agreement.

2. When estimated compensation amounts have been stated herein and it subsequently becomes apparent to ENGINEER that a compensation amount thus estimated will be exceeded, ENGINEER shall give OWNER written notice thereof. Promptly thereafter OWNER and ENGINEER shall review the matter of services remaining to be performed and compensation for such services. OWNER shall either agree to such compensation exceeding said estimated amount or OWNER and ENGINEER shall agree to a reduction in the remaining services to be rendered by ENGINEER, so that total compensation for such services will not exceed said estimated amount when such services are completed. If ENGINEER exceeds the estimated amount before OWNER and ENGINEER have agreed to an increase in the compensation due ENGINEER or a reduction in the remaining services, the ENGINEER shall be paid for all services rendered hereunder.

C4.02 *For Basic Services Having An Undetermined Scope -- Direct Labor Costs Times a Factor Method of Payment*

A. OWNER shall pay ENGINEER for:

1. *Resident Project Representative Services.* For services of ENGINEER's Resident Project Representative, if any, under paragraph A1.05.A.2.a of Exhibit A of the Agreement, an amount equal to ENGINEER's Direct Labor Costs times a Factor of _____ for the services of ENGINEER's employees engaged directly in resident Project representation, plus Reimbursable Expenses and ENGINEER's Consultant's charges, if any. The total compensation under this paragraph is estimated to be $_____, based upon Contract Times as set forth in paragraph C4.01.

2. *Post-Construction Phase Services.* For Post-Construction Phase services under paragraph A1.06 of Exhibit A, an amount equal to the ENGINEER's Direct Labor Costs times a Factor of _____ for the services of ENGINEER's employees engaged directly on the Project, plus Reimbursable Expenses and ENGINEER's Consultant's charges, if any in the Post-Construction Phase. The total compensation under this paragraph is estimated to be $_____.

C4.03 *For Additional Services*

A. OWNER shall pay ENGINEER for Additional Services as follows:

1. *General.* For services of ENGINEER's employees engaged directly on the Project pursuant to paragraph A2.01 or A2.02 of Exhibit A of the Agreement, except for services as a consultant or witness under paragraph A2.01.A.20, an amount equal to ENGINEER's Direct Labor Costs times a Factor of _____, plus Reimbursable Expenses and ENGINEER's Consultant's charges, if any.

2. *Serving as a Witness.* For services performed by ENGINEER's employees as witnesses giving testimony in any litigation, arbitration or other legal or administrative proceeding under paragraph A2.01.A.20, at the rate of $_____ per day or any portion thereof (but compensation for time spent in preparing to testify in any such litigation, arbitration or proceeding will be on the basis provided in paragraph C4.03.A.1). Compensation for ENGINEER's Consultants for such services will be on the basis provided in paragraph C4.05.

C4.04 *For Reimbursable Expenses*

A. When not included in compensation for Basic Services under paragraph C4.01, OWNER shall pay ENGINEER for Reimbursable Expenses as the rate set forth in Appendix 1 of this Exhibit C.

B. Reimbursable Expenses include the following categories: transportation and subsistence incidental thereto; obtaining bids or proposals from Contractor(s); providing and maintaining field office facilities including furnishings and utilities; subsistence and transportation of Resident Project Representative and their assistants; toll telephone calls and telegrams; reproduction of reports, Drawings, Specifications, Bidding Documents, and similar Project-related items in addition to those required under Exhibit A, and, if authorized in advance by OWNER, overtime work requiring higher than regular rates. In addition, if authorized in advance by OWNER, Reimbursable Expenses will also include expenses incurred for computer time and the use of other highly specialized equipment.

C. The amounts payable to ENGINEER for Reimbursable Expenses will be the Project-related internal expenses actually incurred or allocated by ENGINEER, plus all invoiced external Reimbursable Expenses allocable to the Project, the latter multiplied by a Factor of _____.

D. The Reimbursable Expenses Schedule will be adjusted annually (as of _____) to reflect equitable changes in the compensation payable to ENGINEER.

C4.05 *For ENGINEER's Consultant's Charges*

A. Whenever compensation to ENGINEER herein is stated to include charges of ENGINEER's Consultants, those charges shall be the amounts billed by ENGINEER's Consultants to ENGINEER times a Factor of _____.

C4.06 *Direct Labor Costs*

A. Direct Labor Costs means salaries and wages paid to ENGINEER's employees but does not include payroll related costs or benefits.

B. The Direct Labor Costs and the Factor applied to Direct Labor Costs will be adjusted annually (as of _____) to reflect equitable changes in compensation payable to ENGINEER.

4.07 *Factors*

A. The Direct Labor Costs Factor includes the cost of customary and statutory benefits including, but not limited to, social security contributions, unemployment, excise and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation, and holiday pay applicable thereto; the cost of general and administrative overhead, which includes salaries and wages of principals and employees engaged in business operations not directly chargeable to projects, plus non-Project operating costs, including but not limited to, business taxes, legal, rent, utilities, office supplies, insurance, and other operating costs; plus operating margin or profit.

B. External Reimbursable Expenses and ENGINEER's Consultant's Factors include ENGINEER's overhead and profit associated with ENGINEER's responsibility for the administration of such services and costs.

C4.08 *Other Provisions Concerning Payment*

A. *Progress Payments.* The portion of the amounts billed for ENGINEER's services which are identified in paragraphs C4.02 and C4.03, will be based on the Direct Labor Costs for the cumulative hours charged to the Project during the billing period by all of ENGINEER's employees, times the Applicable Direct Labor Costs Factor, plus Reimbursable Expenses and ENGINEER's Consultant's charges, if any.

B. *Extended Contract Times.* Should the Contract Times to complete the Work be extended beyond the period identified in paragraph C4.01, payment for ENGINEER's services on the basis of the Direct Labor Costs Times a Factor Method of Payment shall be continued.

C. *Estimated Compensation Amounts.*

1. ENGINEER's estimate of the amounts that will become payable for Basic Services are only estimates for planning purposes, are not binding on the parties, and are not the minimum or maximum amounts payable to ENGINEER under the Agreement.

2. When estimated compensation amounts have been stated herein and it subsequently becomes apparent to ENGINEER that a compensation amount thus estimated will be exceeded, ENGINEER shall give OWNER written notice thereof. Promptly thereafter OWNER and ENGINEER shall review the matter of services remaining to be performed and compensation for such services. OWNER shall either agree to such compensation exceeding said estimated amount or OWNER and ENGINEER shall agree to a reduction in the remaining services to be rendered by ENGINEER, so that total compensation for such services will not exceed said estimated amount when such services are completed. If ENGINEER exceeds the estimated amount before OWNER and ENGINEER have agreed to an increase in the compensation due ENGINEER or a reduction in the remaining services, the ENGINEER shall be paid for all services rendered hereunder.

C4.02 *For Basic Services Having An Undetermined Scope -- Salary Costs Times a Factor Method of Payment*

A. OWNER shall pay ENGINEER for:

1. *Resident Project Representative Services.* For services of ENGINEER's Resident Project Representative, if any, under paragraph A1.05.A.2.a of Exhibit A, an amount equal to the ENGINEER's Salary Costs times a Factor of _____ for services of ENGINEER's employees engaged directly in resident Project representation, plus Reimbursable Expenses and ENGINEER's Consultant's charges, if any. The total compensation under this paragraph is estimated to be $_____, based upon Contract Times as set forth in paragraph C4.01.

2. *Post-Construction Phase Services.* For Post-Construction Phase services under paragraph A1.06 of Exhibit A, an amount equal to the ENGINEER's Salary Costs times a factor of _____ for services of ENGINEER's employees engaged directly on the Project, plus Reimbursable Expenses and ENGINEER's Consultant's charges, if any in the Post-Construction Phase. The total compensation under this paragraph is estimated to be $_____.

C4.03 *For Additional Services*

A. OWNER shall pay ENGINEER for Additional Services as follows:

1. *General.* For services of ENGINEER's employees engaged directly on the Project pursuant to paragraph A2.01 or A2.02 of Exhibit A, except for services as a consultant or witness under paragraph A2.01.A.20, an amount equal to the cumulative hours charged to the Project by each ENGINEER's employees times the ENGINEER's applicable Salary Costs times a Factor of _____, plus Reimbursable Expenses and ENGINEER's Consultant's charges, if any.

2. *Serving as a Witness.* For services performed by ENGINEER's employees as witnesses giving testimony in any litigation, arbitration, or other legal or administrative proceeding under paragraph A2.01.A.20, at the rate of $_____ per day or any portion thereof (but compensation for time spent in preparing to testify in any such litigation, arbitration, or proceeding will be on the basis provided in paragraph C4.03.A.1). Compensation for ENGINEER's Consultants for such services will be on the basis provided in paragraph C4.05.

C4.04 *For Reimbursable Expenses*

A. When not included in compensation for Basic Services under paragraph C4.01, OWNER shall pay ENGINEER for Reimbursable Expense at the rate set forth in Appendix 1 of this Exhibit C.

B. Reimbursable Expenses include the following categories: transportation and subsistence incidental thereto; obtaining bids or proposals from Contractor(s); providing and maintaining field office facilities including furnishings and utilities; subsistence and transportation of Resident Project Representative and their assistants; toll telephone calls and telegrams; reproduction of reports, Drawings, Specifications, Bidding Documents, and similar Project-related items in addition to those required under Exhibit A, and, if authorized in advance by OWNER, overtime work requiring higher than regular rates. In addition, if authorized in advance by OWNER, Reimbursable Expenses will also include expenses incurred for computer time and the use of other highly specialized equipment.

C. The amounts payable to ENGINEER for Reimbursable Expenses will be the Project-related internal expenses actually incurred or allocated by ENGINEER, plus all invoiced external Reimbursable Expenses allocable to the Project, the latter multiplied by a Factor of _____.

D. The Reimbursable Expenses Schedule will be adjusted annually (as of _____) to reflect equitable changes in the compensation payable to ENGINEER.

C4.05 *For ENGINEER's Consultant's Charges*

A. Whenever compensation to ENGINEER herein is stated to include charges of ENGINEER's Consultants, those charges shall be the amounts billed by ENGINEER's Consultants to ENGINEER times a Factor of _____.

C4.06 *Salary Costs*

A. Salary Costs means salaries and wages paid to ENGINEER's employees plus the cost of customary and statutory benefits including, but not limited to, social security contributions, unemployment, excise and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation, and holiday pay applicable thereto.

B. The Salary Costs and the Factor applied to Salary Costs will be adjusted annually (as of _____) to reflect equitable changes in the compensable payable to ENGINEER.

C4.07 *Factors*

A. The Salary Costs Factor includes the cost of general and administrative overhead which includes salaries and wages of principals and employees engaged in business operations not directly chargeable to projects, plus non-Project operating costs, including but not limited to, business taxes, legal, rent, utilities, office supplies, insurance, and other operating costs; plus operating margin or profit.

B. External Reimbursable Expenses and ENGINEER's Consultant's Factors include ENGINEER's overhead and profit associated with ENGINEER's responsibility for the administration of such services and costs.

C4.08 *Other Provisions Concerning Payment*

A. *Preparation of Invoices.* The portion of the amounts billed for ENGINEER's services which are identified in paragraphs C4.02 and C4.03 will be based on the applicable Salary Costs for the cumulative hours charged to the Project during the billing period by all of ENGINEER's employees, times the Salary Costs factor, plus Reimbursable Expenses and ENGINEER's Consultant's charges incurred, if any.

B. *Extended Contract Times.* Should the Contract Times to complete the Work be extended beyond the period identified in paragraph C4.01, payment for ENGINEER's services on the basis of the Salary Costs Times a Factor Method of Payment shall be continued.

C. *Estimated Compensation Amounts*

1. ENGINEER's estimate of the amounts that will become payable for Basic Services are only estimates for planning purposes, are not binding on the parties, and are not the minimum or maximum amounts payable to ENGINEER under the Agreement.

2. When estimated compensation amounts have been stated herein and it subsequently becomes apparent to ENGINEER that a compensation amount thus estimated will be exceeded, ENGINEER shall give OWNER written notice thereof. Promptly thereafter OWNER and ENGINEER shall review the matter of services remaining to be performed and compensation for such services. OWNER shall either agree to such compensation exceeding said estimated amount or OWNER and ENGINEER shall agree to a reduction in the remaining services to be rendered by ENGINEER, so that total compensation for such services will not exceed said estimated amount when such services are completed. If ENGINEER exceeds the estimated amount before OWNER and ENGINEER have agreed to an increase in the compensation due ENGINEER or a reduction in the remaining services, the ENGINEER shall be paid for all services rendered hereunder.

This is **Appendix 1 to EXHIBIT C**, consisting of _____ pages, referred to in and part of the **Agreement between OWNER and ENGINEER for Professional Services** dated _____, _____.

Initial:
OWNER _____
ENGINEER_____

Reimbursable Expenses Schedule

Current agreements for engineering services stipulate that the Reimbursable Expenses are subject to review and adjustment per Exhibit C. Reimbursable expenses for services performed on the date of the Agreement are:

FAX	$_____/page
8"x11" Copies/Impression	_____/page
Blue Print Copies	_____/sq. ft.
Reproducible Copies (Mylar)	_____/sq. ft.
Reproducible Copies (Paper)	_____/sq. ft.
Mileage (auto)	_____/mile
Field Truck Daily Charge	_____/day
Mileage (Field Truck)	_____/mile
Field Survey Equipment	_____/day
Confined Space Equipment	_____/day plus expenses
Resident Project Representative Equipment	_____/month
Computer CPU Charge	_____/hour
Personal Computer Charge	_____/hour
CAD Charge	_____/hour
CAE Terminal Charge	_____/hour
VCR and Monitor Charge	_____/day, $_____/week, or $_____/month
Video Camcorder	_____/day, plus $_____/tape
Electrical Meters Charge	_____/week, or $_____/month
Flow Meter Charge	_____/week, or $_____/month
Rain Gauge	_____/week, or $_____/month
Sampler Charge	_____/week, or $_____/month
Dissolved Oxygen Tester Charge	_____/week
Fluorometer	_____/week
Laboratory Pilot Testing Charge	_____/week, or $_____/month
Soil Gas Kit	_____/day
Submersible Pump	_____/day
Water Level Meter	_____/day, or $_____/month
Soil Sampling	_____/sample
Groundwater Sampling	_____/sample
Health and Safety Level D	_____/day
Health and Safety Level C	_____/day
Electronic Media Charge	_____/hour
Long Distance Phone Calls	at cost
Meals and Lodging	at cost

This is **Appendix 2 to EXHIBIT C**, consisting of _____ pages, referred to in and part of the **Agreement between OWNER and ENGINEER for Professional Services** dated _____, _____.

Initial:
OWNER _____
ENGINEER_____

Standard Hourly Rates Schedule

Current agreements for engineering services stipulate that the standard hourly rates are subject to review and adjustment per Exhibit C. Hourly rates for services performed on the date of the Agreement are:

Billing Class 9	Senior Associate	$_____/hour
Billing Class 8	Staff Manager	_____/hour
Billing Class 7	Professional VI	_____/hour
Billing Class 6	Professional V	_____/hour
Billing Class 5	Professional IV	_____/hour
Billing Class 4	Professional III	_____/hour
Billing Class 3	Professional II	_____/hour
Billing Class 2	Technician II	_____/hour
Billing Class 1	Technician I	_____/hour
Principal		_____/hour
Support Staff		_____/hour

SUGGESTED FORMAT
(for use with No. 1910-1, 1996 Edition)

This is **EXHIBIT D**, consisting of _____ pages, referred to in and part of the **Agreement between OWNER and ENGINEER for Professional Services** dated _____, _____.

Initial:
OWNER _____
ENGINEER____

Duties, Responsibilities, and Limitations of Authority of Resident Project Representative

Paragraph 1.01C of the Agreement is amended and supplemented to include the following agreement of the parties:

D6.02 *Resident Project Representative*

A. ENGINEER shall furnish a Resident Project Representative ("RPR"), assistants, and other field staff to assist ENGINEER in observing progress and quality of the Work. The RPR, assistants, and other field staff under this Exhibit D may provide full time representation or may provide representation to a lesser degree.

B. Through such additional observations of Contractor's work in progress and field checks of materials and equipment by the RPR and assistants, ENGINEER shall endeavor to provide further protection for OWNER against defects and deficiencies in the Work. However, ENGINEER shall not, during such visits or as a result of such observations of Contractor's work in progress, supervise, direct, or have control over the Contractor's Work nor shall ENGINEER have authority over or responsibility for the means, methods, techniques, sequences, or procedures selected by Contractor, for safety precautions and programs incident to the Contractor's work in progress, for any failure of Contractor to comply with Laws and Regulations applicable to Contractor's performing and furnishing the Work, or responsibility of construction for Contractor's failure to furnish and perform the Work in accordance with the Contract Documents. In addition, the specific limitations set forth in section A.1.05 of Exhibit A of the Agreement are applicable.

C. The duties and responsibilities of the RPR are limited to those of ENGINEER in the Agreement with the OWNER and in the Contract Documents, and are further limited and described as follows:

1. *General:* RPR is ENGINEER's agent at the Site, will act as directed by and under the supervision of ENGINEER, and will confer with ENGINEER regarding RPR's actions. RPR's dealings in matters pertaining to the Contractor's work in progress shall in general be with ENGINEER and Contractor, keeping OWNER advised as necessary. RPR's dealings with subcontractors shall only be through or with the full knowledge and approval of Contractor. RPR shall generally communicate with OWNER with the knowledge of and under the direction of ENGINEER.

2. *Schedules:* Review the progress schedule, schedule of Shop Drawing and Sample submittals, and schedule of values prepared by Contractor and consult with ENGINEER concerning acceptability.

3. *Conferences and Meetings:* Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences and other project-related meetings, and prepare and circulate copies of minutes thereof.

4. *Liaison:*
   a. Serve as ENGINEER's liaison with Contractor, working principally through Contractor's superintendent and assist in understanding the intent of the Contract Documents.

b. Assist ENGINEER in serving as OWNER's liaison with Contractor when Contractor's operations affect OWNER's on-Site operations.

c. Assist in obtaining from OWNER additional details or information, when required for proper execution of the Work.

5. *Interpretation of Contract Documents:* Report to ENGINEER when clarifications and interpretations of the Contract Documents are needed and transmit to Contractor clarifications and interpretations as issued by ENGINEER.

6. *Shop Drawings and Samples:*
   a. Record date of receipt of Samples and approved Shop Drawings.

   b. Receive Samples which are furnished at the Site by Contractor, and notify ENGINEER of availability of Samples for examination.

   c. Advise ENGINEER and Contractor of the commencement of any portion of the Work requiring a Shop Drawing or Sample submittal for which RPR believes that the submittal has not been approved by ENGINEER.

7. *Modifications:* Consider and evaluate Contractor's suggestions for modifications in Drawings or Specifications and report with RPR's recommendations to ENGINEER. Transmit to Contractor in writing decisions as issued by ENGINEER.

8. *Review of Work and Rejection of Defective Work:*
   a. Conduct on-Site observations of Contractor's work in progress to assist ENGINEER in determining if the Work is in general proceeding in accordance with the Contract Documents.

   b. Report to ENGINEER whenever RPR believes that any part of Contractor's work in progress will not produce a completed Project that conforms generally to the Contract Documents or will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise ENGINEER of that part of work in progress that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.

9. *Inspections, Tests, and System Startups:*
   a. Consult with ENGINEER in advance of scheduled major inspections, tests, and systems startups of important phases of the Work.

   b. Verify that tests, equipment, and systems start-ups and operating and maintenance training are conducted in the presence of appropriate OWNER's personnel, and that Contractor maintains adequate records thereof.

   c. Observe, record, and report to ENGINEER appropriate details relative to the test procedures and systems startups.

   d. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Project, record the results of these inspections, and report to ENGINEER.

10. *Records:*
    a. Maintain at the Site orderly files for correspondence, reports of job conferences, reproductions of original Contract Documents including all Change Orders, Field Orders, Work Change Directives, Addenda, additional Drawings issued subsequent to the execution of the Contract, ENGINEER's clarifications and interpretations of the Contract Documents, progress reports, Shop Drawing and Sample submittals received from and delivered to Contractor, and other Project related documents.

    b. Prepare a daily report or keep a diary or log book, recording Contractor's hours on the Site, weather conditions, data relative to questions of Change Orders, Field Orders, Work Change Directives, or changed conditions, Site visitors, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to ENGINEER.

    c. Record names, addresses and telephone numbers of all Contractors, subcontractors, and major suppliers of materials and equipment.

    d. Maintain records for use in preparing Project documentation.

    e. Upon completion of the Work, furnish original set of all RPR Project documentation to ENGINEER.

11. *Reports:*
    a. Furnish to ENGINEER periodic reports as required of progress of the Work and of Contractor's compliance with the progress schedule and schedule of Shop Drawing and Sample submittals.

    b. Draft and recommend to ENGINEER proposed Change Orders, Work Change Directives, and Field Orders. Obtain backup material from Contractor.

    c. Furnish to ENGINEER and OWNER copies of all inspection, test, and system startup reports.

    d. Report immediately to ENGINEER the occurrence of any Site accidents, any Hazardous Environmental Conditions, emergencies, or acts of God endangering the Work, and property damaged by fire or other causes.

12. *Payment Requests:* Review Applications for Payment with Contractor for compliance with the established procedure for their submission and forward with recommendations to ENGINEER, noting particularly the relationship of the payment requested to the schedule of values, Work completed, and materials and equipment delivered at the Site but not incorporated in the Work.

13. *Certificates, Operation and Maintenance Manuals:* During the course of the Work, verify that materials and equipment certificates, operation and maintenance manuals and other data required by the Specifications to be assembled and furnished by Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have these documents delivered to ENGINEER for review and forwarding to OWNER prior to payment for that part of the Work.

14. *Completion:*
    a. Before ENGINEER issues a Certificate of Substantial Completion, submit to Contractor a list of observed items requiring completion or correction.

    b. Observe whether Contractor has arranged for inspections required by Laws and Regulations, including but not limited to those to be performed by public agencies having jurisdiction over the Work.

c. Participate in a final inspection in the company of ENGINEER, OWNER, and Contractor and prepare a final list of items to be completed or corrected.

d. Observe whether all items on final list have been completed or corrected and make recommendations to ENGINEER concerning acceptance and issuance of the Notice of Acceptability of the Work.

D. Resident Project Representative shall not:

1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).

2. Exceed limitations of ENGINEER's authority as set forth in the Agreement or the Contract Documents.

3. Undertake any of the responsibilities of Contractor, subcontractors, suppliers, or Contractor's superintendent.

4. Advise on, issue directions relative to or assume control over any aspect of the means, methods, techniques, sequences or procedures of Contractor's work unless such advice or directions are specifically required by the Contract Documents.

5. Advise on, issue directions regarding, or assume control over safety precautions and programs in connection with the activities or operations of OWNER or Contractor.

6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by ENGINEER.

7. Accept Shop Drawing or Sample submittals from anyone other than Contractor.

8. Authorize OWNER to occupy the Project in whole or in part.

SUGGESTED FORMAT
(for use with No. 1910-1, 1996 Edition)

This is **EXHIBIT E**, consisting of _____ pages, referred to in and part of the **Agreement between OWNER and ENGINEER for Professional Services** dated _____, _____.

Initial:
OWNER _____
ENGINEER____

NOTICE OF ACCEPTABILITY OF WORK

PROJECT:

OWNER:

OWNER's Construction Contract Identification:

EFFECTIVE DATE OF THE CONSTRUCTION AGREEMENT:

CONSTRUCTION CONTRACT DATE:

ENGINEER:

To:

OWNER

And To:

CONTRACTOR

The undersigned hereby gives notice to the above OWNER and CONTRACTOR that the completed Work furnished and performed by CONTRACTOR under the above Contract is acceptable, expressly subject to the provisions of the related Contract Documents and the terms and conditions set forth on the reverse side hereof.

By:_____

Title:_____

Dated:

_____, _____

(Reverse side of Notice)

CONDITIONS OF NOTICE OF ACCEPTABILITY OF WORK

The Notice of Acceptability of Work ("Notice") on the front side of this sheet is expressly made subject to the following terms and conditions to which all persons who receive said Notice and rely thereon agree:

1. Said Notice is given with the skill and care ordinarily used by members of the engineering profession practicing under similar conditions at the same time and in the same locality.

2. Said Notice reflects and is an expression of the professional judgment of ENGINEER.

3. Said Notice is given as to the best of ENGINEER's knowledge, information, and belief as of the date hereof.

4. Said Notice is based entirely on and expressly limited by the scope of services ENGINEER has been employed by OWNER to perform or furnish during construction of the Project (including observation of the CONTRACTOR's work) under ENGINEER's Agreement with OWNER and under the Construction Contract referenced on the reverse hereof, and applies only to facts that are within ENGINEER's knowledge or could reasonably have been ascertained by ENGINEER as a result of carrying out the responsibilities specifically assigned to ENGINEER under ENGINEER's Agreement with OWNER and the Construction Contract referenced on the reverse hereof.

5. Said Notice is not a guarantee or warranty of CONTRACTOR's performance under the Construction Contract referenced on the reverse hereof nor an assumption of responsibility for any failure of CONTRACTOR to furnish and perform the Work thereunder in accordance with the Contract Documents.

SUGGESTED FORMAT
(for use with No. 1910-1, 1996 Edition)

This is **EXHIBIT F**, consisting of _____ pages, referred to in and part of the **Agreement between OWNER and ENGINEER for Professional Services** dated _____, _____.

Initial:
OWNER _____
ENGINEER_____

Construction Cost Limit

Paragraph 5.02 of the Agreement is amended and supplemented to include the following agreement of the parties:

F5.02 *Designing to Construction Cost Limit*

A. A Construction Cost limit in the amount of _____ _____ Dollars ($_____) is hereby agreed to.

B. A bidding or negotiating contingency of _____ percent will be added to any Construction Cost limit established.

C. The acceptance by OWNER at any time during Basic Services of a revised opinion of probable Construction Cost in excess of the then established Construction Cost limit will constitute a corresponding increase in the Construction Cost limit.

D. ENGINEER will be permitted to determine what types of materials, equipment and component systems, and the types and quality thereof are to be included in the Drawings and Specifications and to make reasonable adjustments in the scope, extent, and character of the Project to the extent consistent with the Project requirements and sound engineering practices to bring the Project within the Construction Cost limit.

E. If the Bidding or Negotiating Phase has not commenced within three months after completion of the Final Design Phase, or if industry-wide prices are changed because of unusual or unanticipated events affecting the general level of prices or times of delivery in the construction industry, the established Construction Cost limit will not be binding on ENGINEER, and OWNER shall consent to an adjustment in such Construction Cost limit commensurate with any applicable change in the general level of prices in the construction industry between the date of completion of the Final Design Phase and the date on which proposals or Bids are sought.

F. If the lowest bona fide proposal or Bid exceeds the established Construction Cost limit, OWNER shall (1) give written approval to increase such Construction Cost limit, or (2) authorize negotiating or rebidding the Project within a reasonable time, or (3) cooperate in revising the Project's scope, extent, or character to the extent consistent with the Project's requirements and with sound engineering practices. In the case of (3), ENGINEER shall modify the Contract Documents as necessary to bring the Construction Cost within the Construction Cost Limit. In lieu of other compensation for services in making such modifications, OWNER shall pay ENGINEER's cost of such services, including the costs of the services of ENGINEER's Consultants, all overhead expenses reasonably related thereto, and Reimbursable Expenses, but without profit to ENGINEER on account of such services. The providing of such services will be the limit of ENGINEER's responsibility in this regard and, having done so, ENGINEER shall be entitled to payment for services and expenses in accordance with this Agreement and will not otherwise be liable for damages attributable to the lowest bona fide proposal or Bid exceeding the established Construction Cost limit.

SUGGESTED FORMAT
(for use with No. 1910-1, 1996 Edition)

This is **EXHIBIT G**, consisting of _____ pages, referred to in and part of the **Agreement between OWNER and ENGINEER for Professional Services** dated _____, _____.

Initial:
OWNER _____
ENGINEER_____

Insurance

Paragraph 6.05 of the Agreement is amended and supplemented to include the following agreement of the parties.

G6.05 *Insurance*

A. The limits of liability for the insurance required by paragraph 6.05.A and 6.05.B of the Agreement are as follows:

1. By ENGINEER:

a. Workers' Compensation:	Statutory
b. Employer's Liability --	
1) Each Accident:	$_____
2) Disease, Policy Limit:	$_____
3) Disease, Each Employee:	$_____
c. General Liability --	
1) Each Occurrence (Bodily Injury and Property Damage):	$_____
2) General Aggregate:	$_____
d. Excess or Umbrella Liability --	
1) Each Occurrence:	$_____
2) General Aggregate:	$_____
e. Automobile Liability --	
1) Bodily Injury:	
a) Each Accident	$_____
2) Property Damage:	
a) Each Accident	$_____
[or]	
1) Combined Single Limit (Bodily Injury and Property Damage): Each Accident	$_____
f. Other (specify):	
_____	$_____

2. By OWNER:

a. Workers' Compensation: Statutory

b. Employer's Liability --
1) Each Accident $_____
2) Disease, Policy Limit $_____
3) Disease, Each Employee $_____

c. General Liability --
1) General Aggregate: $_____
2) Each Occurrence (Bodily Injury and Property Damage): $_____

d. Excess Umbrella Liability --
1) Each Occurrence: $_____
2) General Aggregate: $_____

e. Automobile Liability --
1) Bodily Injury:
a) Each Accident $_____

2) Property Damage:
a) Each Accident $_____

[or]

1) Combined Single Limit (Bodily Injury and Property Damage): Each Accident $_____

f. Other (specify):

_____ $_____

B. *Additional Insureds*

1. The following persons or entities are to be listed on OWNER's policies of insurance as additional insureds as provided in paragraph 6.05.B:

a. _____
ENGINEER

b. _____
ENGINEER'S CONSULTANT

c. _____
ENGINEER'S CONSULTANT

SUGGESTED FORMAT
(for use with No. 1910-1, 1996 Edition)

This is **EXHIBIT H**, consisting of _____ pages, referred to in and part of the **Agreement between OWNER and ENGINEER for Professional Services** dated _____, _____.

Initial:
OWNER _____
ENGINEER_____

Dispute Resolution

Paragraph 6.09 of the Agreement is amended and supplemented to include the following agreement of the parties:

[NOTE: Select one of the two alternatives provided]

H6.09 *Dispute Resolution*

A. OWNER and ENGINEER agree that they shall first submit any and all unsettled claims, counterclaims, disputes, and other matters in question between them arising out of or relating to this Agreement or the breach thereof ("Disputes") to mediation by _____
_____.

[or]

A. All Disputes between OWNER and ENGINEER shall be settled by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association effective at the Effective Date of the Agreement, subject to the limitations and restrictions stated in paragraphs H6.09A.1, H6.09.A.2, H6.09.A.3, and H6.09.A.4 below. This agreement to arbitrate and any other agreement or consent to arbitrate entered into in accordance herewith as provided in this paragraph H6.09.A will be specifically enforceable under prevailing law of any court having jurisdiction.

1. Notice of the demand for arbitration must be filed in writing with the other party to the Agreement and with the American Arbitration Association. The demand must be made within a reasonable time after the Dispute, has arisen. In no event may the demand for arbitration be made after the date when institution of legal or equitable proceedings based on such Dispute,would be barred by the applicable statute of limitations.

2. All demands for arbitration and all answering statements thereto which include any monetary claims must contain a statement that the total sum or value in controversy as alleged by the party making such demand or answering statement is not more than $_____ (exclusive of interest and costs). The arbitrators will not have jurisdiction, power, or authority to consider, or make findings (except in denial of their own jurisdiction) concerning any Dispute, where the amount in controversy of any such Dispute, is more than $_____ (exclusive of interest and costs), or to render a monetary award in response thereto against any party which totals more than $_____ (exclusive of interest and costs).

3. The award rendered by the arbitrators will be final, and judgment may be entered upon it in any court having jurisdiction thereof.

4. If a Dispute in question between OWNER and ENGINEER involves the work of a Contractor, subcontractor, or consultants to the OWNER or ENGINEER (each a "Joinable Party"), either OWNER or ENGINEER may join each Joinable Party as a party to the arbitration between OWNER and ENGINEER hereunder, and ENGINEER or OWNER, as appropriate, shall include in each contract with each such Joinable Party a specific provision whereby such Joinable Party consents to being joined in an arbitration between OWNER and ENGINEER involving the work of such Joinable Party. Nothing in this paragraph H6.09.A.4 nor in the provision of such contract consenting to joinder shall create any claim, right, or cause of action in favor of the Joinable Party and against OWNER or ENGINEER that does not otherwise exist.

SUGGESTED FORMAT
(for use with No. 1910-1, 1996 Edition)

This is **EXHIBIT I**, consisting of _____ pages, referred to in and part of the **Agreement between OWNER and ENGINEER for Professional Services** dated _____, _____.

Initial:
OWNER _____
ENGINEER____

Allocation of Risks

Paragraph 6.11 of the Agreement is amended and supplemented to include the following agreement of the parties:

I6.11.B ***Limitation of ENGINEER's Liability***

[NOTE: Select one of the three alternatives listed below for I6.11 B.1]

1 ***ENGINEER's Liability Limited to Amount of ENGINEER's Compensation.*** **To the fullest extent permitted by law, and notwithstanding any other provision of this Agreement, the total liability, in the aggregate, of ENGINEER and ENGINEER's officers, directors, partners, employees, agents, and ENGINEER's Consultants, and any of them, to OWNER and anyone claiming by, through, or under OWNER for any and all claims, losses, costs, or damages whatsoever arising out of, resulting from or in any way related to the Project or the Agreement from any cause or causes, including but not limited to the negligence, professional errors or omissions, strict liability or breach of contract, or warranty express or implied of ENGINEER or ENGINEER's officers, directors, partners, employees, agents, or ENGINEER's Consultants, or any of them, shall not exceed the total compensation received by ENGINEER under this Agreement.**

[or]

1 ***ENGINEER's Liability Limited to Amount of Insurance Proceeds.*** **ENGINEER shall procure and maintain insurance as required by and set forth in Exhibit G to this Agreement. Notwithstanding any other provision of this Agreement, and to the fullest extent permitted by law, the total liability, in the aggregate, of ENGINEER and ENGINEER's officers, directors, partners, employees, agents, and ENGINEER's Consultants, and any of them, to OWNER and anyone claiming by, through, or under OWNER for any and all claims, losses, costs, or damages whatsoever arising out of, resulting from or in any way related to the Project or the Agreement from any cause or causes, including but not limited to the negligence, professional errors or omissions, strict liability or breach of contract, or warranty express or implied, of ENGINEER or ENGINEER's officers, directors, partners, employees, agents, or ENGINEER's Consultants, or any of them (hereafter "OWNER's Claims"), shall not exceed the total insurance proceeds paid on behalf of or to ENGINEER by ENGINEER's insurers in settlement or satisfaction of OWNER's Claims under the terms and conditions of ENGINEER's insurance policies applicable thereto (excluding fees, costs and expenses of investigation, claims adjustment, defense, and appeal). If no such insurance coverage is provided with respect to OWNER's Claims, then the total liability, in the aggregate, of ENGINEER and ENGINEER's officers, directors, partners, employees, agents, and ENGINEER's Consultants, and any of them to OWNER and anyone claiming by, through, or under OWNER for any and all such uninsured OWNER's claims shall not exceed $_____.**

[or]

1 ***ENGINEER's Liability Limited to the Amount of $_____.*** **Notwithstanding any other provision of this Agreement, and to the fullest extent permitted by law, the total liability, in the aggregate, of ENGINEER and ENGINEER's officers, directors, partners, employees, agents, and ENGINEER's Consultants, and any of them to OWNER and anyone claiming by, through, or under OWNER for any and all claims, losses, costs,**

or damages whatsoever arising out of, resulting from, or in any way related to the Project or the Agreement from any cause or causes, including but not limited to the negligence, professional errors or omissions, strict liability or breach of contract, or warranty express or implied of ENGINEER or ENGINEER's officers, directors, partners, employees, agents, or ENGINEER's Consultants, or any of them shall not exceed the total amount of $_____.

[*NOTE: If appropriate and desired, include I6.11.B.2 below*]

2 *Exclusion of Special, Incidental, Indirect and Consequential Damages.* To the fullest extent permitted by law, and not withstanding any other provision in the Agreement, ENGINEER and ENGINEER's officers, directors, partners, employees, agents, and ENGINEER's Consultants shall not be liable to OWNER or anyone claiming by, through, or under OWNER for any special, incidental, indirect, or consequential damages whatsoever arising out of, resulting from, or in any way related to the Project or the Agreement from any cause or causes, including but not limited to any such damages caused by the negligence, professional errors or omissions, strict liability or breach of contract, or warranty express or implied of ENGINEER or ENGINEER's officers, directors, partners, employees, agents, or ENGINEER's Consultants, or any of them, and including but not limited to:

[*NOTE: list here particular types of damages that Engineer may be concerned about by reason of the nature of the project or specific circumstances, e.g., cost of replacement power, loss of use of equipment or of the facility, loss of profits or revenue, loss of financing, regulatory fines, etc. If Engineer prefers to leave the language general, then end the sentence after the phrase "or any of them."*]

[*NOTE: the above exclusion of consequential and other damages can be converted to a limitation on the amount of such damages, following the format of paragraph I6.11.B.1 above, by providing that "Engineer's total liability for such damages shall not exceed $_____."*]

[*NOTE: If appropriate and desired, include I6.11.B.3 below*]

3 *Agreement Not to Claim for Cost of Certain Change Orders.* OWNER recognizes and expects that certain Change Orders may be required to be issued as the result in whole or part of imprecision, incompleteness, errors, omissions, ambiguities, or inconsistencies in the Drawings, Specifications, and other design documentation furnished by ENGINEER or in the other professional services performed or furnished by ENGINEER under this Agreement ("Covered Change Orders"). Accordingly, OWNER agrees not to sue and otherwise to make no claim directly or indirectly against ENGINEER on the basis of professional negligence, breach of contract, or otherwise with respect to the costs of approved Covered Change Orders unless the costs of such approved Covered Change Orders exceed __% of Construction Cost, and then only for an amount in excess of such percentage. Any responsibility of ENGINEER for the costs of Covered Change Orders in excess of such percentage will be determined on the basis of applicable contractual obligations and professional liability standards. For purposes of this paragraph, the cost of Covered Change Orders will not include any costs that OWNER would have incurred if the Covered Change Order work had been included originally without any imprecision, incompleteness, error, omission, ambiguity, or inconsistency in the Contract Documents and without any other error or omission of ENGINEER related thereto. Nothing in this provision creates a presumption that, or changes the professional liability standard for determining if, ENGINEER is liable for the cost of Covered Change Orders in excess of the percentage of Construction Cost stated above or for any other Change Order. Wherever used in this paragraph, the term ENGINEER includes ENGINEER's officers, directors, partners, employees, agents, and ENGINEER's Consultants.

[*NOTE: Engineer may wish to attempt to negotiate the additional protection contained in the following sentence.*]

[OWNER further agrees not to sue and otherwise to make no claim directly or indirectly against ENGINEER with respect to any Covered Change Order not in excess of such percentage stated above, and OWNER agrees to hold ENGINEER harmless from and against any suit or claim made by the Contractor relating to any such Covered Change Order.]

SUGGESTED FORMAT
(for use with No. 1910-1, 1996 Edition)

This is **EXHIBIT J**, consisting of _____ pages, referred to in and part of the **Agreement between OWNER and ENGINEER for Professional Services** dated _____, _____.

Initial:
OWNER _____
ENGINEER ____

Special Provisions

Paragraph(s) _____ of the Agreement is/are amended to include the following agreement(s) of the parties:

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FORM I

STATE OF MARYLAND
DEPARTMENT OF LABOR, LICENSING AND REGULATION
STATE BOARD FOR PROFESSIONAL ENGINEERS
500 N. CALVERT STREET, ROOM 308
BALTIMORE, MD 21202-3651
PHONE: 410-230-6322 FAX: 410-333-0021
TTY users call Maryland Relay Service

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

RECEIVED_____CARD_____
FEE$_____CK( ) MO( ) BD( )
APPLICATION NO._____
CLK'S INITIALS_____

☐ Application for Examination for Engineer-In-Training	☐ Application for Professional Engineer Licensure by Examination	☐ Application for Professional Engineer Licensure by Reciprocity
(E) **$121.00** Make check payable to : DLLR-PE See page 10 of instructions for exam dates and filing deadlines.	(P) **$171.00** make check payable to: DLLR-PE See page 10 of instructions for exam dates and filing deadlines.	(R) **$100** Make check payable to : DLLR-PE

IMPORTANT NOTICE: SEND ALL MATERIALS, INCLUDING YOUR FEE AND APPLICATION, TO:
STATE BOARD FOR PROFESSIONAL ENGINEERS, 500 N. CALVERT STREET, ROOM 308, BALTIMORE, MD. 21202-3651.
FEE IS NON-REFUNDABLE AND SUBJECT TO CHANGE WITHOUT NOTICE
DEADLINES ARE FINAL. POSTMARKS ARE NOT ACCEPTABLE.

FULL NAME: _____
LAST NAME (NAME ON TRANSCRIPT IF DIFFERENT)

_____
FIRST MIDDLE (IF YOU DO NOT HAVE A MIDDLE NAME, ENTER "N.M.N.")

ADDRESS (Street) _____

(City) _____

(County) _____ (State) _____ (9-digit Zip)_____

Telephone No.: Day_____ Evening _____ E-Mail Address: _____

Social Security Number_____ If not US Citizen: INSA # A_____
(Required By Federal & State Law)

Date of Birth _____ Place of Birth_____

1. My P.E. application is filed under the subsection checked: (see Section V.-B of directions)
   ☐ 14-305(b) ☐ 14-305(c) ☐ 14-305(d)

2. My major field of engineering is_____2a. Discipline I wish to be examined in: _____

3. Have you passed the Fundamentals Examination? ☐ **YES** State_____ Date_____
   ☐ NO If NO file under 14-305(d) **ONLY.** (P.E. CANDIDATES)

4. Has licensure ever been denied?_____ suspended? _____ revoked?_____
   If YES, explain on a separate 8 1/2 x 11 sheet. (typed)

5. Do you hold an unexpired license as a professional engineer? ☐ **YES** ☐ **NO**
   If YES, State_____ License No._____ Expiration Date_____/____/_____

6. Have you ever been convicted of a felony or misdemeanor in any State or Federal court? ☐YES ☐ NO

7. Have you ever been found guilty of misconduct, incompetence, or gross negligence in any jurisdiction? ☐YES ☐ NO

8. Have you been convicted of or received probation before judgment of any drug offense committed after January 1, 1991? ☐ YES ☐ NO

*If you answered **YES** to any question(s) 6-8, submit a letter giving complete explanation and a true test copy of the applicable court document(s). Also, notify the appropriate state licensing board to send a copy of the final order in your case directly to the Maryland Board.*

FORM: DLLR/P/3-PE/1/02rev

9. EDUCATION

EAC/ABET Approved

Name of College or University	Degree	Graduation Date	☐ YES	☐ NO
			☐ YES	☐ NO
Name of College or University	Degree	Graduation Date		

NOTE: An official academic transcript must be sent to the Board's office directly from the college registrar. Transcripts marked "issued to student" will not be accepted. Foreign Degree applicants: See Section V,- E,3 of the instructions.

10. The endorser numbers below must correspond to the numbers in the **ENDORSER NUMBER** boxes at the top right corner of the individual **RPE Forms.** See instructions for Form 1. PROFESSIONAL ENGINEER EXAMINATION APPLICANTS ONLY.

Endorser No.	Company or Employer Name (Enter earliest engagement first)	Name of Endorser	Time Claimed Mo/Yr to Mo/Yr	Number of RPE form
1.			to	
2.			to	
3.			to	
4.			to	
5.			to	
6.			to	

11. REFERENCES OF CHARACTER - (PE EXAM AND RECIPROCITY APPLICANTS ONLY) "This certifies that I have been personally acquainted with the applicant since the year indicated opposite my name; that I have read the foregoing statements, which so far as known to me are correct; that I believe the applicant to be of good character and repute. " Signatures are required below of not fewer than five citizens unrelated to applicant, at least three of whom must be professional engineers, with license number listed, and

Date	Signature	Complete Address	Occupation	Known Since	License No.
			PE		
			PE		
			PE		

12. I understand that by signing this statement, the license for which I am applying will expire two years from date of issue and that I will be required to renew this license and pay the renewal fee prior to the expiration date. I further understand that I may not engage in the occupation or profession for which I am applying until such time as a license has been issued to me.

13. ☐ I am not an employer required to provide employee compensation under the Workers' Compensation Law.
☐ I have workers' compensation coverage, policy/binder no. _____ Issued by the _____

14. In accordance with Executive Order 01.01.1983-18, the Department of Labor, Licensing and Regulation is required to advise you as follows regarding the collecting of personal information: Personal Information requested by the licensing agency of the Department is necessary in determining your eligibility for licensure. Such personal information is also intended for use as an additional means of verifying the licensee's identity or to enable the agency to communicate, in a timely manner, with the licensee should the need arise. The licensee has a right to inspect his/her personal record and to amend or correct the personal data if necessary. Personal information is generally available for inspection by the public only in accordance with the Public Information Act. Personal information is not routinely shared with state, federal or local government agencies.

15. "I HEREBY CERTIFY UNDER PENALTY OF PERJURY THAT THE INFORMATION CONTAINED HEREIN IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. I further authorize the release of any information contained within this agreement to an authorized representative of the Department of Labor, Licensing and Regulation for further investigation." "I certify that I have paid all undisputed taxes and unemployment insurance contributions payable to the Comptroller or the Department of Labor, Licensing and Regulation or have provided for payment in a manner satisfactory to the unit responsible for collection."

Signature of Applicant _____ DATE _____

Form 2

ENDORSER NUMBER

_____

SHEET NUMBER

____ OF ____

STATE OF MARYLAND
DEPARTMENT OF LABOR, LICENSING AND REGULATION
STATE BOARD FOR PROFESSIONAL ENGINEERS
REPORT OF PROFESSIONAL EXPERIENCE (RPE)

INSTRUCTIONS TO APPLICANT: After reading instructions, complete Section I and Section III (back), make a copy for your records, and forward this original RPE Form to your endorser. Be sure the endorser number in this box at the top right corner of his form corresponds with the appropriate endorser number and information on the back of **Form 1. SECTIONS I, II AND III MUST BE TYPED.**

SECTION I: TO BE COMPLETED BY APPLICANT. (This section must be typed.)

Name: _____
LAST FIRST MIDDLE

Address: _____
STREET CITY STATE ZIP

Telephone: (home) _____ (work) _____ Date of Birth _____

Social Security Number: _____

Experience described on the reverse side of this **RPE form** was obtained while employed by:

Firm or Organization Name: _____

Endorser's Name: _____ Phone # _____

Address: _____
STREET CITY STATE ZIP

Beginning _____ Ending _____ ☐ Full Time ☐ Part Time, _____ hrs/wk

I hereby certify that the work experience described on the reverse side of this **RPE Form** and the time claimed for that experience are true and accurate.

_____
APPLICANT'S SIGNATURE DATE

SECTION II: TO BE COMPLETED BY ENDORSER (Please type)

INSTRUCTIONS TO ENDORSER:

1. Read carefully the applicant's Report of Professional Experience on the back of this RPE Form and any continuation sheets.
2. Provide the requested information below and answer questions 1-6. Please type.
3. If you disagree with any information presented by the applicant on this form, or wish to provide any other information for consideration by the Board relative to the applicant, please submit a separate letter with this form. If you do so, please identify the applicant by full name and social security number in your letter and indicate that they are an applicant for professional engineer examination.
4. SIGN THE ENDORSER'S AFFIDAVIT IN SECTION IV ON THE BACK OF THIS FORM AND AT THE BOTTOM OF EACH RPE CONTINUATION SHEET (**Form 2a**), IF ANY, or if you do not sign this affidavit, please explain in a separate letter and attach it to this form.
5. DO NOT RETURN ORIGINAL TO THE APPLICANT.

Mail completed form to:

Maryland Department of Labor, Licensing and Regulation
State Board for Professional Engineers
500 N. Calvert Street, Room 308
Baltimore, Maryland 21202-3651

Endorser Name: _____

Current Address: _____
STREET CITY STATE ZIP

Are you a licensed Professional Engineer? ☐ YES ☐ NO If "YES" - State _____ License No. _____

WITH RESPECT TO THE APPLICANT'S REPORT OF PROFESSIONAL EXPERIENCE AS DESCRIBED ON THE BACK OF THIS FORM:

1. Does the description accurately reflect the work personally performed by the applicant? ☐ YES ☐ NO
2. Does the time claimed by the applicant for this experience reasonably reflect the actual time? ☐ YES ☐ NO
3. Was the applicant's work performed in an adequate and professional manner? ☐ YES ☐ NO
4. Are you attaching a separate letter with additional information about the applicant? ☐ YES ☐ NO
5. IDENTIFY YOUR WORK RELATIONSHIP WITH THE APPLICANT AT THE TIME (LINE SUPERVISOR, PROJECT ENGINEER, WORK DIRECTOR, ETC.). IF NONE EXPLAIN.

_____ Position _____

6. Comments: _____

REPORT OF PROFESSIONAL EXPERIENCE

SECTION III: TO BE COMPLETED BY APPLICANT. (Must be typed)

A. Describe your general engineering duties during your employment with the firm named on the front of this RPE:

B. Describe, in separate paragraph(s), the specific kinds of engineering work you personally performed while employed by the firm named on the front of the RPE. Use specific assignments as examples and describe how these comply with the definition of "Practice Engineering" in the Instructions, Section VII. Then indicate separately in the TIME column at the right, the time you spent on each such kind of work. If you need more than one endorser from a single firm, USE SEPARATE RPE FORMS FOR EACH ENDORSER. If you do not have sufficient space on this form to fully report the experience to be verified by a single endorser, use one or more RPE Continuation Sheets (**Form 2a**). BOTH YOU AND YOUR ENDORSER MUST SIGN EVERY SHEET.

	TIME	
	YRS	MOS
TOTAL THIS SHEET		

Indicate the number of RPE CONTINUATION SHEETS (Form 2a) for this endorser. If zero, enter "0" ☐

Were you supervised by a P.E.? ☐ YES ☐ NO Evidence Attached? ☐ YES ☐ NO

C. Describe briefly your personal level of responsibility or authority for the work described above. Explain here any changes in your title resulting from promotions or other job changes during this period of employment.

SECTION IV: ENDORSER'S AFFIDAVIT. (Also complete Section II on other side.)

I have read the applicant's Report of Professional Experience, I hereby certify that I am knowledgeable about, and qualified to attest to, the applicant's work and engineering ability and that, except as otherwise noted on the front of this form, or in attached correspondence, the work experience described by the applicant and the time claimed therefore are generally true and accurate.

Endorser's Signature

Date

☐ I cannot so certify. Letter of explanation attached

FORM 2A

STATE OF MARYLAND
DEPARTMENT OF LABOR, LICENSING AND REGULATION
STATE BOARD FOR PROFESSIONAL ENGINEERS

RPE CONTINUATION SHEET

ENDORSER NUMBER
_____
SHEET NUMBER
___of___

Name:_____
LAST FIRST MIDDLE

___-___-____
SOCIAL SECURITY NO.

Signature:_____ Date of Birth ___/___/___

	TIME	
	YRS	MOS
Total this sheet		
Total this endorser		

SECTION IV: ENDORSER'S AFFIDAVIT:

I have read the applicant's Report of Professional Experience. I hereby certify that I am knowledgeable about, and qualified to attest to, the applicant's work and engineering ability and that, except as otherwise noted on the front of this form, or in attached correspondence, the work experience described by the applicant and the time claimed therefore are generally true and accurate.

_____
ENDORSER'S SIGNATURE (if P.E., so note)

_____
DATE

P R

FORM 3

VERIFICATION OF LICENSURE

TO: Maryland State Board for Professional Engineers

(TITLE OF BOARD REQUESTING CERTIFICATION)

500 N. Calvert Street . Room 308 . Baltimore, Maryland 21202-3651

(410) 230-6322 • FAX: (410) 333-0021

TTY users call Maryland Relay Service

BOARD OF PRIOR LICENSURE

STATE BOARD
ADDRESS

(NAME OF APPLICANT) _____

(STREET ADDRESS) _____

(CITY) (STATE) (ZIP) _____

Social Security No. _____

I. THE ABOVE NAMED PERSON WAS LICENSED AS:	LICENSE NUMBER	DATE ISSUED	VALID UNTIL	DATE APPLIED
☐ PROFESSIONAL ENGINEER				
☐ ENGINEER-IN-TRAINING (passed FE)				

II. THIS LICENSURE WAS BASED UPON:

1. WRITTEN EXAMINATION: _____ hrs. P&P _____ hrs. OTHER

   NO ☐ YES ☐ _____ hrs. FE (EIT) _____ Date (Mo/Yr) FE

2. ORAL EXAMINATION: _____ hrs. P&P

   NO ☐ YES ☐ DISCIPLINE EXAMINED IN: _____

3. ☐ COMITY WITH: (1)_____ (2)_____

4. EDUCATION AND EXPERIENCE: Were your state's requirements equal to or more demanding at the time this person became licensed than Maryland's requirements which, from June 1, 1967 to present, have been:

EDUCATION		EXPERIENCE
None	**and**	12 years of which 5 years were in responsible charge
OR		
Non-accredited 4 year engineering degree	**and**	8 years
OR		
EAC/ABET accredited engineering degree	**and**	4 years

NO ☐ YES ☐

If the applicant was licensed with your Board prior to June 1, 1967, please list the requirements in effect at that time on the other side.

BY:_____

TITLE:_____

DATE:_____ (BOARD SEAL)

NOTE TO APPLICANTS: Include a postage paid, addressed envelope for return to Maryland Board.

Form 4

STATE BOARD FOR PROFESSIONAL ENGINEERS

ENGINEERING CURRICULUM CHECKLIST

CANDIDATES APPLYING UNDER TITLE 14-305(c) (NON-EAC/ABET APPROVED CURRICULUM) AND ALL FOREIGN DEGREE APPLICANTS (SEE SECTION V.-E,3 OF THE DIRECTIONS) MUST COMPLETE THE FOLLOWING COURSE OUTLINE CHART. **THIS FORM MUST BE TYPED.**

NOTE: You are advised to review Regulation .09.23.05.06 to determine courses which are not allowed.

Last Name First Middle

A. LIST COLLEGES/UNIVERSITIES ATTENDED	DEGREE	DATE RECEIVED
C/U # 1.		
C/U # 2.		
C/U #3.		

AN ENGINEERING CURRICULUM OF 4 SCHOLASTIC YEARS OR MORE FROM A COLLEGE OR UNIVERSITY CURRICULUM SHALL CONSIST OF AT LEAST:

B. 15 semester credit hours in mathematics, which shall include differential calculus, integral calculus, and differential equations.

C/U #	COURSE NAME	COURSE NUMBER	COURSE CONTENT/DESCRIPTION	CREDIT HOURS	
				SEMESTER	QTR
			TOTAL		

C. 15 semester credit hours in basic sciences including general chemistry and physics with calculus.

C/U #	COURSE NAME	COURSE NUMBER	COURSE CONTENT/DESCRIPTION	CREDIT HOURS	
				SEMESTER	QTR
			TOTAL		

D. 30 semester credit hours in engineering subjects which shall be selected from subject areas such as:

Statics and Dynamics	Electronics	Digital Signals and Systems
Strength of Materials	Solid State Physics	Finite Element Analysis
Materials Science	Physical Chemistry	Transient Analysis and Feedback Control Theory
Thermodynamics	Electrodynamics	Design
	Transfer and Transport Phenomenon	

C/U #	COURSE NAME	COURSE NUMBER	COURSE CONTENT/DESCRIPTION	CREDIT HOURS	
				SEMESTER	QTR
			TOTAL		

E. 15 semester credit hours in advanced courses in mathematics, science or engineering.

C/U #	COURSE NAME	COURSE NUMBER	COURSE CONTENT/DESCRIPTION	CREDIT HOURS	
				SEMESTER	QTR
			TOTAL		

NOTE: Incorporated in the engineering curriculum as integral elements of instruction shall be:

(1) Hands on quantitative laboratory work correlated with the science and design instruction.
IMPORTANT: Place an * next to the course subjects that included laboratory work.

(2) For graduation subsequent to 1975, at least one high level computer language such as FORTRAN or PASCAL so that the student is able to compose computer programs to solve problems in science and design.

THIS FORM MUST BE RETURNED COMPLETED WITH YOUR APPLICATION

THIS FORM MUST BE TYPED

(R)

Form 5

STATE OF MARYLAND
DEPARTMENT OF LABOR, LICENSING AND REGULATION
STATE BOARD FOR PROFESSIONAL ENGINEERS

RECORD OF EXPERIENCE
RECIPROCITY APPLICANT ONLY

FULL NAME _____
LAST FIRST MIDDLE

Enter earliest employment first.

Engagement Number	Date Mo.	Date Yr.	Employment Record (a) Name, Complete Location and Character of Business (b) Kind of applicant's Engineering Work (c) Degree of Responsibility	Engineering Experience Claimed Time in Years	Engineering Experience Claimed Time in Months	Name and complete Address of Person Familiar with Each Position
1	From:					
	To:					
	From:					
	To:					
	From:					
	To:					
	From:					
	To:					
	From:					
	To:					
	From:					
	To:					
			TOTAL TIME			

PAGE____OF____

(R)

Form 5
Page 2

STATE OF MARYLAND
DEPARTMENT OF LABOR, LICENSING AND REGULATION
STATE BOARD FOR PROFESSIONAL ENGINEERS

RECORD OF EXPERIENCE
RECIPROCITY APPLICANT ONLY

FULL NAME _____
Last First Middle

Engagement Number	Date Mo.	Date Yr.	Employment Record (d) Name, Complete Location and Character of Business (e) Kind of applicant's Engineering Work (f) Degree of Responsibility	Engineering Experience Claimed Time in Years	Engineering Experience Claimed Time in Months	Name and complete Address of Person Familiar with Each Position
	From:					
	To:					
	From:					
	To:					
	From:					
	To:					
	From:					
	To:					
	From:					
	To:					
			TOTAL THIS SHEET			
			TOTAL ALL SHEETS			

PAGE____OF____

DIRECTIONS

NOTE: Each form and section of these directions will be marked with the pertinent applicant symbol to direct your attention appropriately:

E = Engineer-in-Training Exam P = Professional Engineer Exam R = Licensure by Reciprocity

P R

I. PROFESSIONAL ENGINEER LICENSING IN MARYLAND

Professional Engineer licensing in the State of Maryland is under the jurisdiction of the Department of Labor, Licensing and Regulation. Professional Engineer licensing is administered by the Board for Professional Engineers which consists of seven members appointed by the Governor.

P R

II. AUTHORIZATION TO PRACTICE PROFESSIONAL ENGINEERING IN MARYLAND

A. Legal authority to practice engineering in Maryland can be obtained in several ways:
   1. **Licensure by examination in Maryland:** You can obtain a license to practice engineering in Maryland by successfully completing <u>all</u> parts of a written examination in the Principles and Practice of Engineering. However, before you are permitted to sit for this examination, you must satisfy the Board that you have met the Board's education and/or experience requirements.

   2. **Reciprocity:** The Board may accept previous licensure in another state, territory, or foreign country provided that the requirements for licensure in that state, territory, or foreign country are equivalent to those required by the Board.

   3. **Limited License:** A limited license allows a Professional Engineer licensed in another state to practice engineering in the State of Maryland for one specific job which may not last for more than one year.

B. The forms herein can only be used for numbers 1 and 2 above. Please contact the Board's office for any information regarding the Limited License application.

E

III. REQUIREMENTS FOR ENGINEER-IN-TRAINING EXAMINATION/ APPLICATION FORMS

A. An applicant may qualify to take the Fundamentals of Engineering (EIT) examination if the applicant:
   1. is in the process of completing a curriculum in engineering at a college or university within the six months after the next scheduled administration of the fundamentals of engineering examination, provided that evidence of such is provided by the college or university; or
   2. has been graduated from a college or university on completion of a curriculum of engineering.

B. <u>Engineer-in-Training Candidates must submit the following:</u>
   Form 1; Form 4 (if required; see ** below); **Official Transcript(s).** (All documents <u>must</u> be received by the Board, by the filing deadline. Postmarks are not acceptable.)
   1. **If you are applying under a curriculum from a college/university in the United States that is not approved by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (EAC/ABET), you must complete **Form 4**, the Engineering Checklist.
   2. **NOTE:** YOU SHOULD MAKE A PHOTOCOPY OF ALL FORMS WHEN COMPLETED FOR YOUR RECORDS. IF YOU ARE CONTACTED BY THE BOARD ABOUT YOUR APPLICATION, YOU WILL THEN BE ABLE TO RESPOND ACCURATELY TO ANY INQUIRY.
   3. Engineer-in-Training applicants are encouraged to retain the rest of this application and use it as a reference/guide in documenting work experience which you will claim to qualify for the Professional Engineer's examination in the future.

P

IV. REQUIREMENTS FOR PROFESSIONAL ENGINEER LICENSURE BY EXAMINATION

To qualify for licensure as a Professional Engineer in Maryland, you must:
1. file a **COMPLETE** application which is **TYPED.** A complete application shall include all required forms and supporting documents in **COMPLETE** and **PROPER FORM**, whether submitted by you or by others on your behalf;
2. demonstrate a satisfactory combination of education and/or **ACCEPTABLE EXPERIENCE**, as outlined in Section V. of these directions;
3. pass the examination, as required by the Board;
4. [illegible] good character and reputation; and
5. pay the required fees to the Board.

V. PROFESSIONAL ENGINEER APPLICATION FORMS/QUALIFICATIONS

A. Professional Engineer Examination Candidates must submit the following:

Form 1; Form 2 (2a if needed); **Form 3** (if necessary to verify EIT score); **Form 4** (if graduate of a Non-EAC/ABET approved curriculum); official transcript(s) if applicable, Proof of Engineering Experience (if not supervised by a P.E.).

IMPORTANT NOTE: The care with which you prepare and submit your application will be duly noted by the Board. Applications submitted with disregard to the instructions provided herein will be rejected. Evidence must also be organized in a clear and coherent manner. Drawings, calculation sheets, reports, or any other evidence should be clearly organized for review by the Board. Submittals which are not readily understandable will be rejected and the application will be considered incomplete.

B. An applicant may qualify for the Professional Engineers Examination by meeting the educational and experience requirements specified in one of the following subsections of the Professional Engineer law if said applicant:

Subsection 14-305(b)
has been graduated from a college or university on completion of at least a four year curriculum in engineering, or its equivalent, that the Board approves, and has at least four years of work experience in engineering that is satisfactory to the Board and that indicates to the Board that the applicant is competent to practice engineering, and has passed an eight hour written examination in the fundamentals of engineering given by the Board; **OR**

Subsection 14-305(c)
has been graduated from a college or university on completion of at least a four year curriculum in engineering, or its equivalent, that the Board has not approved, and has at least eight years of work experience in engineering that is satisfactory to the Board and that indicates to the Board that the applicant is competent to practice engineering, and has passed an eight hour written examination in the fundamentals of engineering given by the Board; **OR**

Subsection 14-305(d)
has at least twelve years of work experience in engineering that is satisfactory to the Board, during at least five years of which the applicant has been in responsible charge, if the collective experience indicates to the Board that the applicant may be competent to practice engineering. "Responsible Charge" means the direct control and personal supervision of engineering that requires initiative, professional skill, and independent judgement. NOTE: An applicant may substitute a complete scholastic year of at least thirty credit hours in a college or university of engineering approved by the Board for a year of experience upon demonstrating grades satisfactory to the Board (i.e.: one year of four year engineering curriculum accredited by EAC/ABET. The Board does not approve colleges or universities, but four year engineering curricula.). If the applicant has successfully completed one or more years of a college or university curriculum in engineering that has not been approved by the Board (i.e.: not accredited by EAC/ABET), the Board may allow, for each of those years, a credit of up to six months towards the experience requirement.

C. **PROOF OF ENGINEERING EXPERIENCE**

Before an applicant can be approved to sit for the Examination in the Principles and Practice of Engineering, the Board must determine that the applicant has acquired the amount and type of engineering experience required by the P.E. law. It is the responsibility of the applicant to select and submit documentary evidence needed to permit the Board to determine if, during each engagement, the applicant's engineering experience:

1. conformed to the definition of "Practice Engineering" (see D below);
2. equaled the years of engineering experience required by the different application options; **and**
3. showed a variety of engineering assignments increasing in complexity as the applicant gained experience.

D. **ACCEPTABLE PROFESSIONAL ENGINEERING EXPERIENCE**

Acceptability of work experience toward fulfillment of the requirements for examination or licensure is determined, in part, by the extent to which the general characteristics of that work conform with the definition of "Practice engineering" as set forth in Business Occupations and Profession Article §14-101(f).

1. "Practice engineering" means to provide any service or creative work the performance of which requires education, training, and experience in the application of:
   (i) special knowledge of the mathematical, physical, and engineering sciences; and
   (ii) the principles and methods of engineering analysis and design.
2. In regard to a building or other structure, machine, equipment, process, works, system, project, or public or private utility, "practice engineering" includes:
   (i) consultation;
   (ii) design;
   (iii) evaluation;
   (iv) inspection of construction to ensure compliance with specifications and drawings;
   (v) investigation; and
   (vi) planning.

E. THE APPLICANT MAY PROVIDE PROOF OF ENGINEERING EXPERIENCE THROUGH ONE OF THE FOLLOWING PROCEDURES:

1. Applicants Who Have Been Supervised by a P.E.

If an applicant's engineering work during an engagement was performed under the direct supervision of a licensed Professional Engineer, and both the applicant and the P.E. were employed by the same engineering firm, the Board will accept a certification by the supervising P.E. as evidence that the applicant performed the engineering work described on **Form 2**, and that the experience conformed to the requirements of the P.E. law. With such certification, the applicant does not have to submit any additional documentary evidence, such as work or calculation sheets, reports, studies, investigations, etc. with the application. However, the Board has the right to request such documentary evidence if the applicant's description of his or her engineering work is deemed to be unsatisfactory, or if the certification of the P.E. appears to be inappropriate or fraudulent.

The above describes a new initiative by the Board to expedite the licensing process by placing part of the responsibility of certifying professional competence on previously licensed P.E.s. Therefore, the applicant is advised to notify the P.E. endorser that the Board will investigate any P.E. certification which might be questionable, and may bring disciplinary action against a licensed P.E. who is found to have made a fraudulent certification on an applicant's Form 2.

2. Applicants Who Have Not Been Supervised by a P.E.

Applicants who **have not** had direct supervision in their engineering work during an engagement by a licensed Professional Engineer are required to submit documentary evidence of their engineering experience. Such evidence should be selected to be representative of the engineering work performed during each engagement. If an applicant's engineering experience was for a single employer, the evidence submitted should be typical of various work assignments during the time period covered by the application.

3. Applicants whose education and engineering experience was obtained in foreign countries: The Board recognizes that some applicants who were educated and worked initially as engineers in other countries are not always able to submit calculation work sheets, reports or other supporting evidence to document their engineering experience. Therefore, if the application of such an applicant is professionally prepared and the description of the applicant's engineering experience is detailed and clearly described, the Board may grant up to one half credit for qualifying but undocumented foreign experience. In addition, the Board may grant some additional credit for engineering experience obtained in other countries if the applicant can provide suitable documentation. General statements written by employers acknowledging experience of applicants cannot be substituted for copies of actual engineering documents which can be used by the Board to verify an applicant's experience.

Also, for foreign applicants applying under 14-305(d), some credit for engineering experience may be given for the applicant's engineering education if it can be determined from official documents that it meets the requirements of an "engineering curriculum" as defined in Chapter 5 of COMAR 09.23.

All foreign degree applicants must complete the Engineering Curriculum Checklist in order for the Board to evaluate your education. See Section XI, **Form 4** of these instructions. However, if you have received an MS degree from a college or university of engineering that has been approved by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology, you do not need to complete **Form 4**, the Engineering Curriculum Checklist.

4. Applicants whose engineering experience was obtained while in the military service or is otherwise related to national defense: Applicants whose engineering experience was obtained while in the military service or which has been

classified because of national defense and security concerns are often limited in the amount of evidence they can submit. In such cases, the applicant should attempt to have unclassified examples of his/her work released so that it can be

included with the application to document claims of engineering experience. If this cannot be done, the applicant can provide a detailed written description of the engineering work he/she performed. To supplement a written description, the applicant also may create unclassified examples of the type of engineering work performed during each engagement. For example, if the applicant had been involved in the design of a piping system for a nuclear submarine, a theoretical design of a similar piping system, using different flow quantities and different pressure and temperature requirements, could be substituted.

5. **Requirements for documentation of work experience**

The following characteristics of engineering must be included in either the applicant's written narratives or by being clearly displayed in the documentary evidence submitted:

a. the mathematics and specific principles of physical science and engineering used;
b. a description of the technical problems encountered, the method of investigation, and procedures used in design and economic analyses;
c. the specific aspects of the project you were responsible for, if the project was a team assignment;
d. your exact status with respect to supervision and technical authority, by description or reference to an organizatior chart indicating the flow of responsibility;
e. copies of selected work sheets which you prepared. As an example show calculations for the development of design data;
f. a signature or initials on each calculation work sheet so that the engineering work can be traced directly to you.

Be sure that all evidence is clearly identified with the number of the endorser on the RPE **Form 2** related to the evidence, along with a date indicating the approximate time the evidence was originally made, as well as your name for identification purposes.

VI. PROFESSIONAL ENGINEER EXAMINATION - GENERAL INFORMATION

A. The full examination is given by the Board twice a year in April and October. Candidates will be examined in the discipline in which education and/or experience were gained. Group I examinations will be offered in April and October. Group II examinations will be offered in October only. Indicate the discipline in which you wish to be examined by TYPING that discipline in the space provided in number 2 on the first page of the application.

GROUP I (APRIL & OCTOBER)	GROUP II (OCTOBER ONLY)	
CHEMICAL	AGRICULTURAL	MINING/MINERAL
CIVIL (SANITARY AND STRUCTURAL)	CONTROL SYSTEMS	NUCLEAR
ELECTRICAL	FIRE PROTECTION	PETROLEUM
ENVIRONMENTAL	INDUSTRIAL	
MECHANICAL	MANUFACTURING	
STRUCTURES I	METALLURGICAL	

*** NAVAL ARCHITECTURE & MARINE ENGINEERING OFFERED **APRIL, 2001 & APRIL, 2003 ONLY**

B. The filing deadline for the Professional Engineer examination is no later than 5:00 pm 120 (one hundred and twenty) days in advance of the earliest examination date established by the Board, as noted on **Form 1.**

C. Some required forms must be mailed to the Board directly by persons other than yourself. **It is your responsibility to assure that ALL submissions made by other people on your behalf are RECEIVED by the filing deadline. POSTMARKS ARE NOT ACCEPTABLE. There will NOT be a grace period for transcripts, report of professional experience, evidence, and verification of passage of the fundamentals of engineering examination. No exceptions. POSTMARKS ARE NOT ACCEPTABLE.**

D. Special Assistance/Handicapping Conditions - The Maryland Board complies with the Americans with Disabilities Act in accommodating examination candidates with special needs. Any candidate needing special assistance or accommodations to take the examination due to a handicapping condition or religious observances should attach a letter to the application describing the special circumstances involved and provide such documentation as the Board shall require for validation. Such requests should be submitted as far in advance of the application deadline as possible, and with subsequent reexamination applications, if required.

E. EXAMINATION SITE: If approved, you will be notified of the examination site by the Board when you receive your examination entrance notice.

F. You may duplicate forms for your use.

G. **Note:** You should make a photocopy of all forms when completed for your records. If you are contacted by the Board about your application, you will then be able to respond accurately to any inquiry.

R VII. RECIPROCITY LICENSURE QUALIFICATION

A. An applicant may qualify for licensure by reciprocity who:

1. is licensed to practice Professional Engineering in another state, territory of the United States, or foreign country; **and**
2. provides adequate evidence that, at the time the applicant was licensed by the other state, territory, or foreign country, the applicant met requirements that were equivalent to those then required by the laws of this State; **or**
3. provides adequate evidence that, at the time of application for a license by reciprocity, under this section, the applicant meets the requirements currently required by the laws of this State.

B. Applicants for Licensure by Reciprocity must submit the following:

Form 1; **Form 3**; **Form 4** (foreign degree applicants and applicants with a degree not accredited by EAC/ABET); **Form 5**; and official transcript(s) if applicable.

C. **NOTE:** YOU SHOULD MAKE A PHOTOCOPY OF ALL FORMS WHEN COMPLETED FOR YOUR RECORDS. IF YOU ARE CONTACTED BY THE BOARD ABOUT YOUR APPLICATION, YOU WILL THEN BE ABLE TO RESPOND ACCURATELY TO ANY INQUIRY.

E P R VIII. INSTRUCTIONS FOR FORM 1

A. **FORM 1** - Application for EIT/PE Examination/PE Reciprocal Licensure ***NOTE:** Applicants submitting a currently valid "NCEES Council Record" need not submit transcript(s) and verification of licensure. You are not required to complete sections 9, 10 & 11 on Form I and Forms 3, 4 and 5 of the Application Form.

1. **FORM 1 MUST BE TYPED.**
2. All applicants must complete numbers 1-8. Note: Maryland law allows the public to obtain the address of record of a license holder, therefore you may enter either a home or business address on **Form 1.**
3. In line number 1, the numbers refer to subsections, or paragraphs, of Section 14-305 of the licensing law. If you are applying for PE licensure by examination, you must qualify under the combination of education and/or experience described in one of these subsections. Please read Section V. above to determine under which subsection you qualify. Subsection 14-305(c) refers to a course of study which the Board has been unable to assess, and that has not been approved by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (EAC/ABET). Most foreign curricula fall into this category.

If you are applying for licensure by examination under a non-approved curriculum from a college/university in the United States, you must complete Form 4 (ENGINEERING CURRICULUM CHECKLIST). If you have a degree from a foreign college or university, you must complete Form 4. If you are applying for the Engineer-in-Training examination and are not enrolled in an EAC/ABET approved curriculum, you must complete Form 4 and check the appropriate box in number 1 of Form 1.

4. In number 2, **TYPE** your major field of engineering and the discipline in which you wish to be examined. Please see the list of disciplines in Section VI above.
5. PE examination and Reciprocity licensure applicants must answer number 3.
6. All applicants must answer number 4.
7. PE examination and Reciprocity applicants must answer number 5.
8. If you answered "YES" to any question(s) 6-8, submit a letter giving complete explanation and a true test copy of the applicable court document(s). Also, notify the appropriate state licensing board to send a copy of the final order in your case directly to the Maryland Board.
9. In number 9, check the education level completed, the date of graduation (month/year) and if applicable, provide the name of the college/university attended and the type of degree you earned.
10. Complete number 10 only if you are applying for Professional Engineer Licensure by Exam. EIT and Reciprocity applicants are not required to complete this section. Enter the full name of all applicable employers (employers who can testify about your Professional Engineering work) and the dates of employment (month/year to month/year). List employers in chronological order with earliest employment in

number 1. If you left a company and then returned to it later, list each period of employment separately and in chronological order. Be very careful to ensure that your RPE forms are numbered to match the employers as listed in this section. You may supplement this section with an additional, typed chronology, if necessary.

11. Number 11 is to be completed by PE Exam and Reciprocity applicants only. EIT applicants may disregard this section. PE Exam and Reciprocity applicants must obtain the signatures of five persons unrelated to you who can attest to your good character and reputation. Three of these signatures must be from Professional Engineers, preferably not those listed as endorsers for the Reports of Professional Experience, and must include their license number and classification.
12. All applicants should note number 12.
13. All applicants must complete number 13.
14. All applicants should note number 14.
15. All applicants must sign and date number 15.
16. All applicants: Make check payable to DLLR-PE in the amount designated on **Form 1** and mail to the Board's office with the appropriate documents:

STATE BOARD FOR PROFESSIONAL ENGINEERS
500 N. CALVERT STREET, ROOM 308
BALTIMORE, MD. 21202-3651

THE CORRECT FEE MUST BE REMITTED WITH THIS FORM.

Note: ALL APPLICANTS - If you change your address, you must notify, the Board's office, in writing. Failure to do so may cause delay in the processing of your application and/or receipt of your examination notice or grades.

IX. INSTRUCTIONS FOR FORM 2 & 2A

FORM 2 - Report of Professional Experience. (PE examination applicants only)

1. **Form 2 MUST BE TYPED.**
2. Four (4) copies of **Form 2** are provided. If additional copies are needed, you may photocopy **Form 2** as described in Section VI of these instructions.
3. Sections I and III on **Form 2** must be completed by the applicant. NOTE: Section I must be completed on each RPE form you use.
4. For each separate employment, identify each person from whom you will seek an endorsement. In general, your endorser should be the person who is/was the immediate supervisor of your work. If you are unable to obtain a supervisor's endorsement, select another person with whom you worked who is sufficiently knowledgeable about your work to attest to the accuracy of your experience description. If part of your experience results from self-employment (e.g. as a licensee in another state), endorsement can be from a responsible subordinate or from a client for whom you provided professional services.
5. Using **Form 1**, page 2, number 10 as a reference, begin with your EARLIEST employment, assign the RPE form with the Endorser Number 1 to the individual who will sign as endorser for the first work experience. This number goes in the Endorser Box in the top right hand corner of the RPE.
6. Assign the other RPE Forms to those persons from whom you will seek subsequent endorsement signatures. Make sure you number the forms in chronological sequence per **Form 1**, page 2, number 10. Fill in the Sheet Number box indicating that the RPE **Form 2** is "1" of "X" (X being the total number of sheets for that particular employment including the RPE **Form 2** and all RPE **Forms 2a** used).
7. You must use separate RPE forms for **EACH** endorser, even if they work for the same company.
8. If you worked for the same company more than once, with other employment interrupting those work experiences, you must use SEPARATE RPE forms for each such time period, even if they are to be endorsed by the same person. This is required in order that your experience can be accounted for chronologically.
9. On the reverse side of each RPE form, complete parts A, B, and C of Section III (**MUST BE TYPED**).
    A. Part A should be a precise description of your engineering duties. This section can be stated in general terms and should indicate your TITLE.

    B. Part B should contain a **DETAILED** description of your specific engineering work. If you need more space than is provided in Part B for your description, use **FORM 2a**, the RPE continuation sheet. Make sure you enter the appropriate Endorser Number in the box at the top right corner of **FORM 2a**.

WHEN PREPARING THE DESCRIPTION OF YOUR EXPERIENCE, BE SPECIFIC ABOUT YOUR PERSONAL CONTRIBUTION TO ENGINEERING PROJECTS TO WHICH YOU WERE ASSIGNED; AVOID TERMS LIKE "PARTICIPATE IN," "INVOLVED WITH," OR SIMILAR GENERALITIES.

NOTE: Acceptability of work experience toward fulfillment of the requirements for examination or licensure is determined, in part, by the extent to which the general characteristics of that work conform with the definition of "Practice Engineering" as set forth in Business Occupations and Profession Article §14-101(f). See Section V. of these directions.

Regardless of the total time claimed on a single RPE sheet, BREAK THE TOTAL TIME DOWN INTO SEGMENTS, each of which describes one kind of work you have performed, providing for each segment a sufficiently detailed description of your personal activities to allow the Board to make a proper evaluation of that work and indicating IN THE TIME COLUMN THE TOTAL TIME YOU SPENT ON THAT SPECIFIC KIND OF WORK.

10. In the column to the right of Part B, enter the time claimed for the experience described on that page in years and months. At the bottom of the time column, total the times claimed for that endorser, including RPE Continuation Sheets (**Form 2a**), if used.
11. If you were not supervised by a Professional Engineer, you must include evidence of your engineering experience with your application. Please ensure that your evidence is labeled to correspond to the endorser to whom it relates. (Refer to Section V.-E for instructions on submitting evidence.
12. If you use RPE Continuation Sheets (**Form 2a**), enter the number of such sheets used for each RPE form at the bottom of Part B of that form. If you did not use RPE Continuation Sheets (**Form 2a**), enter "0".
13. Complete Part C of Section III, providing a brief description of <u>your level of responsibility</u> for the work described in Part B of Section III.
14. Make a copy of all RPE Forms for your records. Then mail or deliver the **ORIGINAL** copies which you have signed and dated to your endorsers with a letter requesting them to complete Section II of the RPE **Form 2** and endorse the Form in Section IV. Make sure the endorser knows that if you used any of the RPE Continuation Sheets (**Form 2a**), the **ENDORSER MUST SIGN EVERY SHEET**. We suggest that you provide each endorser with a pre-addressed, stamped envelope for his/her use in mailing the completed RPE Form **DIRECTLY TO THE BOARD AT THE ADDRESS SHOWN IN SECTION II OF THE RPE FORM.**
15. **If you are applying for admission to an examination, make sure your endorsers know that their endorsed submissions must be received no later than the stated filing deadline. Postmarks are not acceptable. You are responsible for ensuring that all forms are submitted to the Board by the filing deadline.**
16. <u>YOU MUST TRY TO OBTAIN AN APPROPRIATE ENDORSEMENT FOR EACH RPE FORM</u>. If you are unable to obtain an endorsement, staple to that RPE Form copies of any document(s) which might serve as evidence of your employment, such as a letter of appointment, a letter of termination, an evaluation of your personal work, or pay stubs covering the first and last dates of employment. Such documentation must bear identification of the employer on the original. Send those unendorsed RPE Forms only, <u>TOGETHER WITH A LETTER DESCRIBING YOUR SPECIFIC EFFORTS TO OBTAIN APPROPRIATE ENDORSEMENTS</u>, directly to the Board with **Form 1**.

FORM 2a - RPE Continuation Sheet

1. If the written description of your experience with an endorser will not fit on one RPE **Form 2**, use as many copies of the RPE Continuation Sheet, **Form 2a**, as necessary to complete the description. **This form may be photocopied.**
2. Like the RPE Form, **CONTINUATION SHEETS MUST BE TYPED.**
3. In the top right corner of the Continuation Sheet, enter the endorser number from the RPE Form to which the Continuation Sheet relates. Number the Continuation Sheets for each RPE Form separately, such that the first Continuation Sheet for each endorser is number "2 of X" (X being the total number of sheets including the RPE **Form 2** and all **Form 2a** Continuation Sheets).
4. Use the time column on the RPE Continuation Sheet in the same manner in which you used the time column on the RPE **Form 2**. For each Continuation Sheet, the boxes at the bottom of the time column should indicate the total time claimed on that sheet and the cumulative total time for all sheets, including the RPE **Form 2**, up to and including that sheet.
5. The last Continuation Sheet for an endorser should indicate, in the last box, the total time claimed for experience while working with that endorser.
6. Arrange the RPE **Form 2** and the Continuation Sheets **2a** for each endorser in order, with the RPE **Form 2** on top, and staple them using a single staple in the top left hand corner, before mailing or delivering them to your endorsers.

7. In addition to the RPE **Form 2, EVERY CONTINUATION SHEET FORM 2a MUST BE SIGNED BY YOUR ENDORSER.**

X. INSTRUCTIONS FOR FORM 3

FORM 3 - Verification of Licensure (PE examination/Licensure by reciprocity applicants)

THIS FORM MUST BE USED IF YOU ARE APPLYING FOR RECIPROCAL LICENSURE OR IF YOUR EIT CERTIFICATION IS FROM ANOTHER STATE.

1. **THIS FORM MUST BE TYPED.**
2. **TYPE** in Section I the name and address of the State Board from which you are seeking verification of licensure. Also **TYPE** your name, address and social security number in the space provided.
3. Send this **Form 3** to the State Board as typed in Section I. It is suggested that you include a postage paid envelope addressed to the Maryland Board to assist the other State Board in processing your verification request.
4. Sections II and III are to be completed by the other State Board.

XI. INSTRUCTIONS FOR ENGINEERING CURRICULUM CHECKLIST

FORM 4 - Engineering Curriculum Checklist

THIS FORM MUST BE USED IF YOU ARE APPLYING FOR LICENSURE UNDER A NON-EAC/ABET APPROVED CURRICULUM, 14-305(c) OR 14-305(D) (see Section V., E, 3.) NOTE: APPLICANTS APPLYING WITH A FOREIGN DEGREE MUST OBTAIN AN EVALUATION OF THE DEGREE FROM AN EVALUATION SERVICE EXCEPT APPLICANTS WHOSE DEGREES ARE LISTED IN THE ABET INTERNATIONAL YEARBOOK. THE BOARD RECOMMENDS OBTAINING AN EVALUATION FROM NCEES AS IT IS THE MOST DETAILED AGAINST ABET STANDARDS. EVALUATIONS, REGARDLESS OF WHERE THEY ARE OBTAINED (ALTHOUGH THEY MUST BE FROM A RECOGNIZED EVALUATION SERVICE) MUST INDICATE THE CREDIT VALUE (PER U.S. COLLEGE STANDARDS) OF EACH COURSE AS WELL AS THE COURSE CONTENT.

1. **THIS FORM MUST BE TYPED.**
2. **Type** your full name on the line provided.
3. In Box A, **type** the names of the colleges/universities attended; the degree(s) awarded and the date the degree(s) was awarded. In all following boxes denote the college/university by the number you assigned to it in box A.
4. In Box B, **type** the requested information regarding the **MATHEMATICS** courses you have taken, totaling at least 15 semester credit hours. Remember that the relevant courses should include differential calculus, integral calculus, and differential equations and should be described as such in the course content column.
5. In Box C, **type** the requested information regarding courses in the **BASIC SCIENCES** you have taken, totaling 15 semester credit hours. Remember, the relevant courses should include general chemistry and physics with calculus and should be described as such in the course content column.
6. In Box D, **type** the requested information regarding the **ENGINEERING** courses you have taken, totaling at least 30 semester credit hours. These courses should include:

Statics and Dynamics	Physical Chemistry
Strength of Materials	Electrodynamics
Materials Science	Digital Signals and Systems
Thermodynamics	Finite Element Analysis
Transfer and Transport Phenomena	Electronics
Design	Solid State Physics

Transient Analysis and Feedback Control Theory

7. In Box E, **TYPE** the requested information regarding advanced courses in **MATHEMATICS, SCIENCE, OR ENGINEERING** you have taken, totaling 15 semester credit hours.
8. **NOTE:** Incorporated in the engineering curriculum as integral elements of instruction shall be:
   (1) Hands on quantitative laboratory work correlated with the science and design instruction; and

(2) For graduation subsequent to 1975, at least one high-level computer language such as FORTRAN or PASCAL so the student is able to compose computer programs to solve problems in science and design.

XII. INSTRUCTIONS FOR FORM 5

FORM 5 - Record of Experience in Chronological Order - Licensure by Reciprocity Applicants

1. **THIS FORM MUST BE TYPED.**
2. Type your name on the line provided.
3. List all engineering engagements you have had. Begin with the earliest engagement first and list engagements in chronological order. Engagements should be briefly described in the a-b-c indicated in the "Employment Record: column
4. Indicate the engineering experience claimed during each engagement in years and months in the column provided.
5. Different engagements with the same employer are to be determined by changes in kind of work, or in degree of responsibility.
6. Work can be classified as "engineering experience" when it requires the use of mathematics, the physical sciences and the principles of engineering acquired by practical experience. Refer to Section V. - D of these directions for the definition of "practice engineering".
7. You must be extremely specific in describing your engineering experience. The Board must assure itself that the experience you have had would qualify you for licensure in Maryland.
8. If you need more space, you may copy the chart on the back of the page. If you do use more pages, please indicate so in the space provided.
9. Number all additional pages used.

ENGINEERING-IN-TRAINING EXAMINATION

EXAMINATION DATE	FILING DEADLINE
April 20, 2002	January 21, 2002
October 26, 2002	July 29, 2002

PROFESSIONAL ENGINEER EXAMINATION

EXAMINATION DATE	FILING DEADLINE
April 19, 2002	December 20, 2001
October 25, 2002	June 27, 2002

EXAMINATION FEES

ENGINEER-IN-TRAINING EXAM	$ 121.00
PROFESSIONAL ENGINEER EXAM	$ 171.00

NOTE: FEES ARE NON-REFUNDABLE AND NON-TRANSFERABLE. FEES ARE SUBJECT TO CHANGE, WITH PUBLIC NOTICE.

APPLICATION, FEES, AND ALL SUPPORTING DOCUMENTS MUST BE RECEIVED BY THE FILING DEADLINE.

STATE OF MARYLAND
DEPARTMENT OF LABOR, LICENSING AND REGULATION
STATE BOARD FOR PROFESSIONAL ENGINEERS
500 N. CALVERT STREET, ROOM 308
BALTIMORE, MARYLAND 21202-3651
(410) 333-6322 / FAX - (410) 333-6314

DO NOT WRITE IN THIS SPACE OFFICE RECORD
RECEIVED _____ CARD _____
FEE $ _____ CK ( ) MO ( ) BD ( )
REG. NO. _____
CLK'S INITIALS _____
LICENSE EXPIRED _____

APPLICATION FOR LATE RENEWAL OF LICENSE

$100 Penalty Fee plus $_____ for all back Renewal Fees = $_____

FEE IS NON REFUNDABLE AND IS SUBJECT TO CHANGE WITHOUT NOTICE

Make check payable to DLLR-PE - Do Not Send Cash

SOCIAL SECURITY NO. _____ LICENSE NUMBER _____

YEAR LAST LICENSED IN MD. _____

FULL NAME _____
FIRST MIDDLE LAST

HOME ADDRESS _____
STREET AND NUMBER

_____
CITY STATE ZIP CODE

DATE OF BIRTH _____ PLACE OF BIRTH _____

TELEPHONE NUMBER - HOME _____ BUSINESS _____

I submit the following reason(s) for my failure to renew my license within the required twelve-month period:

_____

_____

If you were not exempt from licensure under applicable provisions of Title 14, did you violate any provision of Business Occupations and Professions Article, Title 14 and the regulations promulgated thereunder? ❑ NO ❑ YES , If YES, please explain.

_____

_____

❑ I am not an employer required to provide employee compensation under the Worker's' Compensation Law.

❑ I have workers' compensation coverage, policy/binder no. _____

issued by the _____

Have you ever been convicted of, or have entered a plea of nolo contendre, to any crime involving moral turpitude in any court of competent jurisdiction? ❑ NO ❑ YES , If YES, please explain on a separate sheet and enclose.

Have you ever had this type of license issued by Maryland or any other state denied, suspended or revoked?
❑ NO ❑ YES , If YES, please explain on a separate sheet and enclose.

(OVER)

COMPLETE THE FOLLOWING EMPLOYMENT RECORD, INDICATING YOUR EMPLOYMENT SINCE YOUR LAST RENEWAL
Enter earliest employment first. Use additional sheets, if needed.

Date Mo	Date Yr.	Employment Record (a) Name, Address and Character of Business (b) Type of Engineering Work performed by Applicant (c) Degree of Responsibility	Engineering Experience Time in Years	Engineering Experience Time in Months	Name and Address of an Individual Familiar with Each Position
From:					
To:					
From:					
To:					
From:					
To:					
From:					
To:					

In accordance with Executive Order 01.01.1983-18, the Department of Labor, Licensing and Regulation is required to advise you as follows regarding the collecting of personal information: Personal information requested by the licensing agency of the Department is necessary in determining your eligibility for licensure. Such personal information is also intended for use as an additional means of verifying the licensee's identity or to enable the agency to communicate, in a timely manner, with the licensee should the need arise. The licensee has a right to inspect his/her personal record and to amend or correct the personal data if necessary. Personal information is generally available for inspection by the public only in accordance with the Public Information Act. Personal information is not routinely shared with state, federal or local government agencies.

I understand that by signing this statement, the license for which I am applying will expire on June 30th of each even numbered year and that I will be required to renew this license and pay the renewal fee prior to the above expiration date. I further understand that I may not engage in the profession for which I have applied until such time as a license has been issued to me.

I further certify that I have paid all undisputed taxes and unemployment contributions payable to the Comptroller of the Department of Economic and Employment Development or have provided for payment in a manner satisfactory to the unit responsible for collection.

"I HEREBY CERTIFY UNDER PENALTY OF PERJURY THAT THE INFORMATION CONTAINED HEREIN IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. I further authorize the release of any information contained within this agreement to an authorized representative of the Department of Labor, Licensing and Regulation for further investigation."

Signature of Applicant _____ Date Signed _____

APPROVED _____ Date _____

DENIED _____ Date _____

STATE OF MARYLAND
MARYLAND DEPARTMENT OF LABOR, LICENSING AND REGULATION
DIVISION OF OCCUPATIONAL AND PROFESSIONAL LICENSING
STATE BOARD FOR PROFESSIONAL ENGINEERS
500 N. CALVERT STREET BALTIMORE, MARYLAND 21202-3651
ROOM 308
410-230-6322/ TTY users call Maryland Relay Service 1-800-735-2258
FAX (410) 333-6314

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

RECEIVED_____ CARD_____
FEE $_____ CK ( ) MO ( ) BD ( )
LIMITED LICENSE NO. _____
CLK'S INITIALS _____

PROFESSIONAL ENGINEERS
APPLICATION FOR LIMITED LICENSE

FEE APPLICATION FOR LIMITED LICENSE
$25.00
FEE IS NON-REFUNDABLE & SUBJECT TO CHANGE With Public Notice
Make check payable to "DLLR-PE"

1. I hereby apply for a LIMITED LICENSE as provided in Business Occupations and Professions Article , Section 14-316 Annotated Code of Maryland, to practice as a Professional Engineer in Maryland for a period not to exceed (12) months From

_____ 19 _____ on the basis of my licensure as a Professional Engineer in the State of

_____ License Number _____ Expiration Date _____

2. Full Name _____
LAST FIRST MIDDLE (IF YOU DO NOT HAVE A MIDDLE NAME ENTER N.M.N.)

3. Home Address - Street _____

City _____ State _____

Zip Code _____ Telephone No. _____

E-MAIL

Date of Birth _____ Place of Birth _____

4. Social Security No. _____

5. Name and Address of Applicant's Business or Firm: _____

_____ Telephone No. _____

6. Name and mailing address of client: _____

_____

_____

7. Name, description and specific location of project: _____

_____

_____

8. Describe services to be performed: _____

_____

_____

9. If the project involves a building for public occupancy, list the name and license number of the licensed Maryland Architect on the project _____

It is understood that the license will be limited solely to the specific project and professional services as described in this application and cannot be extended or renewed beyond the expiration date shown on the license. It is understood further that all plans, specifications, plats and reports prepared by me and issued to clients or filed with public authorities shall bear the

imprint of my _____ (STATE) seal with my personal signature and the number of the license

written immediately adjacent thereto.

Have you been convicted of a felony or misdemeanor related to the practice of engineering in any State or Federal court
( ) YES ( ) NO.

Have you ever had a license to practice engineering denied, suspended, or revoked by Maryland or any other State?
( ) YES ( ) NO.

Have you been convicted of or received probation before judgement for any drug offense committed after January I' 1991.
( ) YES ( ) NO.

☐ I am not an employer required to provide employee compensation under the Worker's Compensation Law.

☐ I have Worker's compensation Cover. policv/Binder No. - _____

issued by _____

In accordance with Executive Order 01.01.1983-18, the Department of Labor, Licensing and Regulation is required to advise you as follows regarding the collection of personal information.

Personal information requested by the licensing agency of the Department is necessary in determining your eligibility for licensure. Such personal information is also intended for use as an additional means of verifying the licensee's identity or to enable the agency to communicate, in a timely manner. with the licensee should the need arise. The licensee has a right to inspect his personal record and to amend or correct the personal data if necessary.

Personal information is generally available to the public only in accordance with the Public Information Act. Personal Information is not routinely shared with state, federal or local governmental agencies.

"I HEREBY CERTIFY UNDER PENALTY OF PERJURY THAT THE INFORMATION CONTAINED HEREIN IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF AND THE EVIDENCE I AM SUBMITTING IS WORK PREPARED BY ME." I further authorize the release of any information contained within this application to an authorized representative of the Department of Labor, Licensing and Regulation for further investigation.

I further certify that I have paid all undisputed taxes and unemployment insurance contributions payable to the Comptroller or the Department of Labor. Licensing and Regulation or have provided for payment in a manner satisfactory to the unit responsible for collection.

Signature of Applicant _____ Date Signed _____

THE CORRECT FEE MUST BE REMITTED WITH THIS FORM

FOR OFFICE USE ONLY

APPROVED BY:

1. _____ DATE _____
2. _____ _____
3. _____ _____
4. _____ _____

DENIED BY: _____

1. _____ DATE _____
2. _____ _____
3. _____ _____
4. _____ _____

REASON FOR DENIAL: _____

_____

LIMITED LICENSE

I. Purpose:
A limited license is designed to allow, under certain conditions, a non-resident engineer. whose practice is entirely outside of Maryland who is currently licensed in any other state, to do **one specific job** in Maryland, **requiring one year or less** without a Maryland license. The term "engineer" is defined in Section 14-101(c) of the Law.

limited → non-resident
outside licensed
1 specific job
1 year maximum
no place of business in Maryland

2. Eligibility
An applicant shall meet all of the following requirements:

- Is licensed to practice engineering in any other state.
- Does not have a place of business in Maryland for the practice of engineering. This requirement shall not apply to a temporary office set up for, and limited exclusively to, the project involved.
- Does not have the status of being denied licensure in Maryland, or in any other state for reasons that would in the opinion of the Board, cause denial of licensure in Maryland.
- Does not have the status of having a license to practice engineering suspended or revoked in any other state for reasons that would in the opinion of the Board, cause denial of licensure in Maryland.
- Has never before been granted a limited license for the practice of engineering in Maryland. ←

3. Issuance of Permit
When it has been determined that the applicant has satisfied all of the conditions in Item 2 above and the required fee has been paid, a Limited License, signed by the Executive Director or a member of the Board and containing the following information, shall be issued: identification number, date of issuance, date of expiration, applicant's name and business affiliation, nature of the work permitted, name, description, and location of the project, designation of the seal to be used, and other information as the Board may determine.

4. Use of Seal
Since the holder of a limited license does not have a Maryland seal the holder shall use only the seal of the state which the Board shall designate on the license.

5. Personal Signature Required
The personal signature of the holder of the limited license and the identification number shall be written immediately adjacent to the imprint of his seal.

6. Location Where the Holder of the Limited License May Perform the Work
A limited license restricts the holder's practice of engineering to a specified period of time and to work incidental to the accomplishment of a particular project located in Maryland. It is immaterial whether the holder of the limited license is located in Maryland or elsewhere while performing such work.

7. Disciplinary Action

- A limited license shall become invalid if the holder's license in the state whose seal the Board permitted to be used lapses for any reason or is suspended or revoked.
- Section 14-317 of the Law shall apply to any holder of a limited license with equal force as it does to a licensee.

8. Public Use Building
Business Occupations and Professions Article, Section 3-103 requires that documents prepared in connection with the alteration, construction, or design of a building intended for public use shall be signed and sealed by a Maryland licensed architect. If the project is a building which is intended for public use, provide the name and license number of the Maryland Licensed Architect also working on the project.

9. Verification Form
Forward the "Verification of Registration" form to the State Board where you are licensed. You should request the State Board to forward the verification form directly to this Board. Make sure to attach a stamped envelope addressed to Maryland Board for Professional Engineers, 500 N. Calvert Street, Room 308, Baltimore, Maryland 21202-3651.

PLEASE READ INSTRUCTIONS CAREFULLY. FAILURE TO DO SO MAY CAUSE DELAY.

MARYLAND DEPARTMENT OF TRANSPORTATION

MARYLAND TRANSIT ADMINISTRATION

MTA Maryland

FACILITIES ENGINEERING DIVISION

LIGHT RAIL DOUBLE TRACK PROJECT
SECTION 5 & 6 CIVIL WORK
HAMBURG ST. TO I-895

CONTRACT NO. T-0492-0340

NOTE TO THE CONTRACTOR

"EROSION AND SEDIMENT CONTROLS WILL BE STRICTLY ENFORCED."

ADA DESIGN CERTIFICATION

"I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT (ADA).

DATE _____ DESIGNER'S SIGNATURE _____

MD. REGISTRATION NO. _____ P.E. R.L.S. OR R.L.A. (CIRCLE) PRINTED NAME _____

DESIGN CERTIFICATION

"I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH THE 1994 STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL OR CURRENT REVISIONS THEREOF, AND DEPARTMENT OF THE ENVIROMENT STORMWATER MANAGEMENT REGULATIONS."

01/11/02 DATE — Kaurash Mechanic DESIGNER'S SIGNATURE

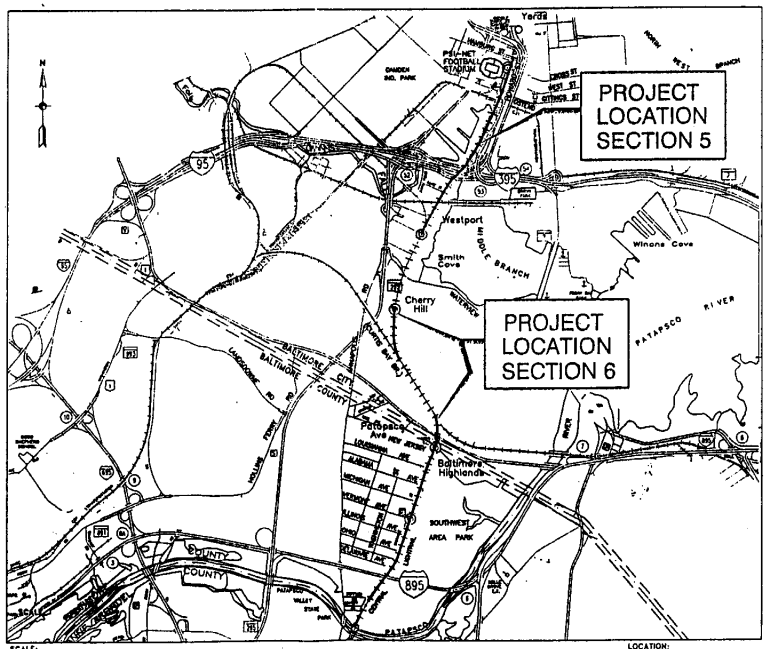
MD. REGISTRATION NO. 16290 (P.E.) R.L.S. OR R.L.A. (CIRCLE) — Kaurash Mechanic PRINTED NAME

OWNERS / DEVELOPER CERTIFICATION

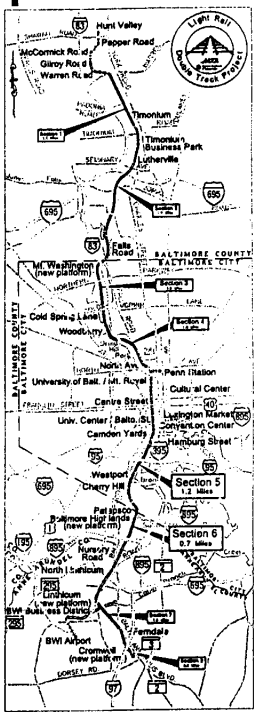
"I/WE HEREBY CERTIFY THAT ALL CLEARING, CONSTRUCTION AND/OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I HEREBY AUTHORIZE THE RIGHT OF ENTRY FOR PERIODIC ON-SITE EVALUATION BY STATE OF MARYLAND, DEPARTMENT OF THE ENVIRONMENT, COMPLIANCE INSPECTORS."

01-02-02 DATE — M. Sharma OWNER/DEVELOPER SIGNATURES

11414 CARD NO. — M. J. SHARMA MGR. FAC. ENGINEERING. PRINTED NAME AND TITLE



VICINITY MAP



MARYLAND TRANSIT ADMINISTRATION

DATE: 01-02-02 APPROVED: M. Sharma
MAHESH SHARMA, P.E.
MANAGER – FACILITIES ENGINEERING

FRH/GP JOINT VENTURE CONSULTANT

CONTRACT NO. T-0492-03

DRAWING NO. G-01

1 OF 2

13

ON-CALL STRUCTURAL ENGINEERING SERVICES
CONTRACT NO. MTA - 0818 A,B &C
EVALUATION OF EXPRESSION OF INTEREST

SCORING SUMMARY BY RATING CATEGORY

DATE: Jan. 4, 99

RATING CATEGORY / AVERAGE SCORE

		EXPERIENCE OF STAFF		SIMILAR PROJECT EXPERIENCE		PAST PERFORM. CONS./SUB.		COMPAT. SIZE OF FIRM		STRUCTURAL ENGG. KNOWLEDGE		FIRM'S LOCATION (BALTIMORE)		
		1		2		3		4		5		6		
	FIRMS	Rate	Wt. = 40	Rate	Wt. = 30	Rate	Wt. = 20	Rate	Wt. = 20	Rate	Wt. = 20	Rate	Wt. = 10	TOTAL
1	**Wilson T. Ballard**	8	320	9	270	10	200	9	180	9	180	10	100	1250
2	**PBQ&D**	9	360	8	240	8	160	9	180	10	200	10	100	1240
3	**RK&K**	9	360	9	270	7	140	8	160	10	200	10	100	1230
4	**Frederick/Hurst**	8	320	9	270	8	160	9	180	9	180	10	100	1210
5	**URS Griener**	9	360	9	270	6	120	9	180	8	160	10	100	1190
6	**Wallace Montg.**	8	320	8	240	8	160	9	180	9	180	10	100	1180
7	**Gannet Fleming**	7	280	9	270	7	140	9	180	9	180	10	100	1150
8	Whitman Requardt	7	280	9	270	7	140	8	160	9	180	10	100	1130
9	KCI Technologies	8	320	8	240	7	140	9	180	8	160	8	80	1120
10	STV, Inc	8	320	7	210	8	160	8	160	8	160	10	100	1110
11	ICF Kaiser	8	320	8	240	7	140	8	160	7	140	10	100	1100
12	Century Engineering	8	320	7	210	7	140	8	160	8	160	10	100	1090
13	WBCM/HNTB	8	320	7	210	7	140	7	140	8	160	10	100	1070
14	Phoenix Engg	7	280	8	240	6	120	8	160	7	140	10	100	1040

RECOMMENDED

附錄14

ON-CALL STRUCTURAL ENGINEERING SERVICES
CONTRACT NO. MTA - 0818 A,B &C
EVALUATION OF TECHNICAL PROPOSAL

SCORING SUMMARY BY RATING CATEGORY

DATE:

RATING CATEGORY / AVERAGE SCORE

		RESPONSE TO SCOPE OF SER.		KEY PERSONNEL EXPERIENCE		EXP. ON SIMILAR PROJECTS		FAMILIAR. WITH LOCAL CONDITIONS		CAPABILITY AND CAPACITY		
		1		2		3		4		5		
		Rate	Wt. = 40	Rate	Wt. = 30	Rate	Wt. = 20	Rate	Wt. = 20	Rate	Wt. = 10	TOTAL
1		9	360	9	270	9	180	10	200	9	90	1100
2		9	360	8	240	9	180	10	200	9	90	1070
3		9	360	8	240	8	160	10	200	9	90	1050
4		8	320	8	240	9	180	10	200	9	90	1030
5		8	320	7	210	9	180	10	200	9	90	1000
6		8	320	7	210	9	180	9	180	9	90	980
7		7	280	7	210	9	180	10	200	7	70	940